An Address
ON
BRIGHT'S DISEASE FROM A CLINICAL STANDPOINT.

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By J. ROSE BRADFORD, M.D., D.Sc., F.R.C.P. Lond., F.R.S.,

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS, UNIVERSITY COLLEGE, LONDON; PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

MR. PRESIDENT AND GENTLEMEN,—In bringing before you the subject of Bright's disease I propose to deal mainly with the matter from the clinical standpoint owing to the many difficulties that present themselves in practice not only with reference to the treatment of the disease but also as regards its recognition and therefore, indirectly, its prognosis. In some respects the problems presented by Bright's disease, and especially those regarding its nature, are more complicated and less capable of being answered definitely now than they were thought to be a few years ago, as I think it is generally recognised that the term is now applied to a considerable number of affections which differ in some respects from one another.

Before considering this it will be useful to summarise shortly the history of our knowledge of this group of diseases. Richard Bright, after whom this disease is named, recognised in 1827 that certain forms of dropsy accompanied by albuminuria differed from other cases of anasarca owing to the presence of gross lesions in the kidney. He further recognised that these renal lesions differed considerably in different cases, that in some the organs might be large and white and smooth and in others contracted and granular. He thought it probable that three forms of the malady might exist, although he left it an open question as to whether these were related to each other and were stages in the same morbid process, or, on the other hand, whether they were separate and independent diseases. It may be said that these three forms are those now described as (1) acute Bright's disease; (2) chronic Bright's disease, in the form of the large white kidney; and (3) the granular, cirrhotic, or red granular kidney. The German pathologists attempted to show that these three affections of the organ were not only closely related but were really stages in one and the same morbid process representing successive stages in its development. This view was especially advanced by Frerichs in 1851 and was soon after refuted by Sir S. (then Dr.) Wilks mainly on the grounds that since acute and chronic Bright's disease were often accompanied by dropsy it would be reasonable to suppose that the granular kidney, if a development of this affection, would occur in patients who presented a history of having formerly suffered from dropsy. This, however, is notoriously not the case inasmuch as the red granular kidney is remarkably insidious in its course and often occurs without any history of any renal symptoms prior to the terminal and fatal ones. No pathologist or clinician at the present day regards the red granular kidney as usually the sequel of a former attack of chronic or even of acute Bright's disease and in modern classifications of the disease the granular kidney is removed from its association with Bright's disease. Subsequently, when the study of the minute lesions was further developed, classification of the renal lesions was based on the assumption that in one case the epithelial elements were mainly affected, so-called tubular or parenchymatous nephritis, and in others the interstitial connective tissue, the so-called "interstitial nephritis," the large white kidney being taken as a type of the one and the granular contracted kidney as a type of the other. This classification is unsound if it be supposed that in the one case the tubular elements are exclusively affected and in the other case the interstitial, since in the large white kidney there may be a considerable overgrowth of fibrous tissue and in the granular kidney marked epithelial changes are often present.

Further, it must be always borne in mind that the distinctions between the so-called large white kidney and granular kidney are not simply those of morbid anatomy. The incidence of the disease, the clinical history, and the complications are all different and we are quite as justified in separating them on clinical grounds as on those afforded by gross or minute anatomical changes. Bright included in the form of the affection known as the large white kidney the lardaceous kidney which has now been also removed from the category of Bright's disease and placed amongst the degenerations of the kidney. As a matter of fact, at the present day typical instances of the large white kidney are not very often seen and there can be little doubt that the greater frequency of the malady formerly was dependent on the association of lardaceous changes with those more truly characteristic of Bright's disease. Improvements in the treatment of syphilis, bone disease, &c., have gradually diminished the incidence of lardaceous disease. We see from this short account that although Bright recognised three forms of the malady, yet at the present day the lardaceous kidney and the granular kidney may with propriety be removed from being included under the term "Bright's disease," notwithstanding the fact that they were both forms of disease which were included by Bright and described by him in his original paper.

There is no justification for including such maladies as consecutive nephritis or pyelonephritis and such chronic degenerative processes as cystic kidneys under the term of "Bright's disease," although it may be that clinically there may be difficulty in making a differential diagnosis between these affections and true Bright's disease in some instances. The difficulties in classifying and distinguishing the forms of Bright's disease at the present time arise mainly from two sources; first, the relationship between acute Bright's disease and acute nephritis, and, secondly, the nature and relationship of the various forms of the affection which are described together by some writers under the term "chronic Bright's disease" or even under the description of the "large white kidney," notwithstanding the fact that in many such conditions the kidneys are neither large nor white. In other words, the points of distinction between some forms of acute Bright's disease and acute nephritis are not always very obvious and, on the other hand, certain forms of genuine chronic Bright's disease approximate in some of their characteristics to the lesions present in the granular kidney. The important point to us as practitioners is the fact that the differences between these affections and the reasons for accurately classifying and separating them are not merely anatomical and pathological ones. There are profound differences from the clinical side, so that, for instance, the separate forms of chronic Bright's disease may have totally different clinical histories and terminations. Many writers look upon Bright's disease, especially in its acute form, as synonymous with nephritis and, in fact, talk of acute Bright's disease as acute nephritis. If this be done it simply means that one must recognise several forms of nephritis, some comparatively trivial and others very severe and liable to be followed or accompanied by serious effects.

VARIETIES OF NEPHRITIS.

It is admittedly difficult to draw a hard-and-fast line between nephritis and Bright's disease, but a fundamental point of distinction applicable to most cases is the fact that in nephritis the morbid effects are limited to those seen in the urine although these may vary much in amount according to the severity of the affection. The quantity of urine is diminished and in severe cases there may even be complete suppression. Such urine as is excreted contains varying quantities of albumin and often blood, and therefore hyaline, epithelial, and blood casts may also be present. There are all grades of severity from a slight albuminuria with or without blood to complete suppression of urine after the secretion of a scanty highly albuminous blood-stained fluid. Dropsy is not present in simple nephritis, however acute it may be, and this affords a sharp point of distinction between this affection and acute Bright's disease.

If the distinction between acute Bright's disease and nephritis be not recognised then one must admit that there are two forms of nephritis, one in which the changes are limited to the urine and the other in which dropsy is liable to occur, and it is for this reason that it seems preferable to limit the term "nephritis" to the former group and to use the term "acute Bright's disease" for the latter.

The following varieties of nephritis may be admitted to exist.

Transitory nephritis.—This group of cases really coincides

with those which were described formerly as cases of "febrile albuminuria" and this condition is seen during the height of most acute infective diseases, although the nephritis and albuminuria are not associated necessarily with the degree of pyrexia present. Thus the condition may be more marked in diphtheria than in pneumonia notwithstanding that the pyrexia is usually higher in the latter disease than in the former. The great characteristics of this transitory nephritis are, firstly, the short duration of the condition, and secondly, the fact that the changes are slight and usually consist of little more than albuminuria, with possibly some diminution in the quantity of urine, although this diminution may be dependent rather on the loss of water by other channels during the pyrexial process than on any serious impairment of the renal functions. This transitory nephritis occurs during the height of the acute infective disease but not necessarily from its very commencement. Thus, in pneumonia, typhoid fever, and diphtheria the albuminuria may not appear until the original malady has existed for some days. Transitory nephritis does not materially influence the prognosis of the original illness that it complicates, and although it may perhaps lay the seeds for future renal disease it must be admitted that in the great bulk of cases this is not the case and that the condition, as its name implies, is entirely transitory. It is possible that the slight albuminuria which may date from an acute specific illness is not always to be looked upon as dependent on progressive renal changes started by that illness but rather as a result of a damage inflicted on a portion of the kidney by an attack of transitory nephritis. In other words, some of the glomeruli or epithelial structures may have been permanently damaged beyond repair by the transitory nephritis and may allow a small amount of albuminous material to pass through from the blood to the urine. It is possible that some of the cases described under the term "physiological and postural albuminuria" may really have this origin. It is important to separate such cases from those where the lesion is chronic and progressive.

Embolic nephritis.—Changes are often seen in the urine which may simulate those produced by nephritis. Thus, the sudden occurrence of hæmaturia and albuminuria is very liable to be looked upon clinically as evidence of the presence of nephritis when it may depend simply and solely on the occurrence of renal infarction and the anatomical changes consequent on this. These changes, provided the infarct is a non-infective one producing simple mechanical effects, are scarcely accurately described as nephritis, as both the hæmorrhage and the albuminuria are due to necrotic changes dependent on the arrest of the circulation. Some varieties of embolism, however, may undoubtedly produce nephritis, and even suppurative nephritis, owing to the embolus containing pathogenic micro-organisms. In embolic nephritis the course of the illness is also, as a rule, transitory although it may be recurrent. When the renal embolism is multiple and very extensive but of a non-infecting character as in some forms of heart disease the effects produced may be described as entirely urinary, dropsy and other phenomena of Bright's disease being conspicuous by their absence.

Toxic nephritis.—Objection may be taken to the term "toxic nephritis," inasmuch as it is probable that nearly all forms of nephritis are of toxic origin. The term would here apply to those cases where nephritis of very varying degrees of severity is produced by the ingestion of certain well-known substances, the most striking examples being turpentine, cantharides, and mercury. The action of turpentine is of particular interest owing to the fact that it will undoubtedly produce a most severe nephritis characterised by a great diminution in the amount of urine together with the presence of a large amount of albumin and of blood and yet notwithstanding these marked renal changes dropsy may be completely absent.

Nephritis, if the word be used as limited to the class of case described above, is not always a serious complication of the underlying diseases or even a serious malady when it occurs by itself and many of the cases included under this category at the present day would by older writers have been described as cases of "acute renal congestion." A point of some interest is the question whether chronic renal disease may owe its origin to former attacks of nephritis of slight severity. It would certainly seem as if this were sometimes the case although the evidence cannot be looked upon as altogether conclusive. Cases are not infrequently seen of patients in the last stages of chronic Bright's disease who give no history of any attack of acute Bright's disease but who admit to having suffered from scarlet fever or some other acute specific fever liable to be complicated by renal changes and it is often assumed that in such instances the patient has suffered from an attack of acute nephritis of a more or less trivial character and that in this way a chronic, progressive, and destructive process has been initiated in the kidney.

BRIGHT'S DISEASE.

Acute Bright's disease.—The fundamental characteristic of acute Bright's disease is the sudden occurrence of dropsy peculiar in its characters and distribution. The dropsy is, of course, accompanied by changes in the urine, but it is remarkable that these are of very varying degrees of severity and it is not uncommon for the urinary changes to be apparently less severe than those seen in some forms of nephritis unaccompanied by dropsy. The onset of acute Bright's disease is almost always marked by the occurrence of a diminution in the quantity of urine and by the presence of a varying degree of albuminuria. In some cases the urine is also loaded with blood that is apt to present a grumous appearance, but cases of very acute Bright's disease with very marked dropsy may occur with little or no blood in the urine and, strange as it may seem, cases have also been described presenting a clinical picture very similar to that of ordinary acute Bright's disease when the urine has contained not only no blood but little or no albumin. Facts such as these and those adduced above seem to afford sufficient reason for regarding acute Bright's disease and nephritis as not necessarily identical. One of the main reasons that have led many writers to look upon the terms as synonymous is the fact that these two affections may have a somewhat similar etiology. Nephritis, as we have seen, is usually of toxic origin and closely related to the incidence of acute infective diseases and the same is undoubtedly true of many cases of Bright's disease. This is not a reason, however, for looking on the two morbid processes as precisely similar and it is quite certain that nephritis of the greatest degree of severity may exist without the characteristic Bright's dropsy and, on the other hand, that Bright's dropsy may be present with comparatively slight changes in the urine.

Chronic Bright's disease.—The problems connected with chronic Bright's disease are numerous and in the forefront we immediately meet with its relationship, if any, with acute Bright's disease. It is undoubted that some cases of acute Bright's disease pass on into the chronic variety, and it has been stated that if albuminuria dependent on Bright's disease persists for more than six months it is at any rate probable that the malady will become permanent and chronic. Although this relationship of chronic Bright's disease to acute is undoubted yet it must be admitted that the great bulk of the cases of chronic Bright's disease are chronic from the beginning and that the patient is unable to date with any degree of accuracy the onset of his illness. This is more or less true for all varieties of chronic Bright's disease, but it is less true for those accompanied by dropsy. It is important to recognise at the outset that some varieties of chronic Bright's disease are chronic from the beginning and are unaccompanied by the presence of any dropsy at any time in the patient's life. The classification of chronic Bright's disease is full of difficulties, but both on clinical and on anatomical grounds I think two fundamental varieties of the malady may be recognised. The first corresponds more or less closely with the condition described as the large white kidney, although, as mentioned above, the kidneys are very often not greatly increased in size. They are smooth and pale, the cortex is increased in width and of a peculiar opaque colour. The patient passes a more or less scanty urine containing a moderate or even large amount of albumin and presents at some period of his illness, and perhaps throughout it, the characteristic renal dropsy. The condition may follow immediately an attack of acute Bright's disease or may be the final result of a number of recurrent attacks or it may be chronic and persistent from the beginning. Notwithstanding the persistence of the albuminuria and even of slight recurrent dropsy such patients often live for many years although they rarely get well if the albuminuria has persisted for as long as six months. Death may occur from inflammatory complication and this I think is usually the case, but it may be due to uræmia, or even in some instances to cerebral lesions associated with the cardio-vascular changes that may develop in the malady. It

may be said, speaking broadly, that the typical mode of death in such an affection is either from the occurrence of an inflammatory complication such as pericarditis, pneumonia, or pleurisy, or else from the results of the anasarca. In the second variety of chronic Bright's disease the kidneys are small, the cortex is diminished in thickness, and the capsule is thickened, stripping with some difficulty and leaving a coarsely granular surface, although the stripping does not necessarily tear the cortex much. The colour of these kidneys varies greatly, in some instances they are white and in others they are mottled, but they differ markedly and completely in appearance from what is ordinarily talked of as the red granular or "raspberry" kidney. Patients suffering from this form of Bright's disease are usually young, not uncommonly under 25 years old, at the time of their death. They do not suffer from dropsy and in a very considerable number of instances they give no history of having suffered from any illness that could be looked upon as a renal one, and in some instances they have not apparently suffered from an acute illness of any kind. Dropsy is absent throughout the illness and they excrete an abundant urine containing a large amount of albumin. Death occurs in the great majority of instances from uræmia and not infrequently from acute fulminating uræmia. Cardio-vascular changes are often well marked and it is really remarkable that in spite of the high degree of development of these death should occur as it so commonly does from uræmia rather than from cerebral complications. Although uræmia is the most typical mode of death in these patients it is often accompanied by certain inflammatory complications, more especially pneumonia and pericarditis. Both of these conditions may exist without their symptoms attracting much notice owing to the violence of the uræmic symptoms.

The second form of chronic Bright's disease is the one which has caused the greatest difference of opinion amongst writers as to its exact nature. Some have included it under the general category of granular kidney owing mainly to the fact that the surface of the kidney is highly granular and have interpreted the well-marked epithelial changes which are also present as the result of an intercurrent attack of tubal nephritis affecting a kidney that had already undergone the changes characteristic of true granular degeneration. Others have thought that this contracted or atrophic form of Bright's disease might be the sequel or the final stage of the large white kidney. A third school have looked upon these changes as a sequel of a former attack of acute Bright's disease or of acute nephritis. There are undoubtedly some resemblances between the symptoms presented by this form of Bright's disease and those seen in the true granular kidney. Thus, in both the urine is abundant and pale and its specific gravity is very low, in both dropsy is liable to be absent, and in both cardio-vascular changes, although not invariable, yet often reach a high degree of development. The presence of the large amount of albumin, however, that is seen, both in the percentage amount and in the total amount lost in the 24 hours, affords one sharp distinction between such cases and the true granular kidney. Further, the appearance of the two groups of cases is quite different. Anæmia, emaciation, and the peculiar so-called pasty or earthy appearance so characteristic of Bright's disease are extremely well marked, whereas patients with the true granular kidney often present, notwithstanding the existence of the malady in its severe form, a comparatively healthy appearance. Another great point of distinction between the two groups of cases lies in the fact that the true granular kidney occurs in middle-aged and elderly persons, whereas this renal lesion is especially seen in the young. There are marked differences also in the post-mortem appearance of the kidneys in the two cases, especially as regards the distribution of the connective tissue and the widespread nature of the epithelial changes in the chronic Bright's kidney; in fact, the diminution in the size of the organ is very largely dependent on the shedding of the epithelium. On theoretical grounds there is much to be said for the view that this form of Bright's disease might conceivably be the sequel of ordinary chronic Bright's disease, in other words, of the large white kidney, and it has been often supposed that subsequently to the destruction of the epithelium during the course of the chronic Bright's disease the fibrous tissue of the kidney might undergo overgrowth and in this way secondarily produce atrophy. This view is to a certain extent a return to the idea advanced by Frerichs of the unity of Bright's disease and in my opinion is untenable for the same reason that has been advanced as regards the supposed relationship of the granular kidney to chronic Bright's disease. If this contracted or atrophic form of Bright's disease were the sequel of a former attack of chronic Bright's disease of the ordinary type one would expect these patients to present a history of such an illness and especially to have suffered from dropsy at some period. The most characteristic feature of the clinical history of these patients is the absence of any history of dropsy. It is difficult, therefore, to regard this form of lesion as in any way the sequel of ordinary so-called chronic Bright's disease.

Although it can be shown on clinical and on pathological grounds that this affection is probably not directly related to the large white kidney or to the granular kidney, it is possible that it may be the result or sequel of a former attack of acute renal disease. In some of the cases collected the patients have given a history of a former attack of acute infective disease and especially of scarlet fever, and although giving no history of a definite renal illness it is possible that an attack of scarlatinal nephritis may have occurred without attracting attention, so that it is not possible to exclude this factor as a possible cause of the production of the malady. Still, as I have insisted upon, in many of these patients no history of any previous acute illness can be obtained, the patient seeking medical advice for the first time for the symptoms produced by the malady in its later stages. It is possible that in some instances lead or some other mineral poison may be a causative factor and one typical case occurred in a young girl who made artificial flowers. For these reasons I should look upon this form of Bright's disease as a more or less independent one and not necessarily the sequel of ordinary chronic Bright's disease, although possibly in some instances the sequel of a former attack of acute Bright's or of acute nephritis. Three forms of Bright's disease may therefore be recognised: acute Bright's disease which is familiar to all, one form of the chronic disorder characterised by the excretion of a scanty, highly albuminous urine and associated with the presence of marked dropsy, and a second variety in which the patient excretes a large quantity of a dilute highly albuminous urine but in which dropsy is completely absent.

Although it is undoubted that in a certain proportion of cases the acute malady may pass on into the chronic, this is by no means invariably the case and it is probable that in the great majority of cases of the chronic disorder in both its forms the malady is chronic from the beginning, and therefore the patient only seeks advice when the symptoms have become marked and the morbid process is well advanced. The practical importance of this is very great as it leads to the important conclusion that we must not expect all cases of Bright's disease to seek advice on account of obvious renal symptoms. It is by no means uncommon for the malady to be discovered accidentally when not expected. This is especially apt to be the case in the second form of Bright's disease, as the occurrence of dropsy in the other form commonly leads to its early recognition. In this second variety the most characteristic and constant feature is a progressive loss of strength and also of flesh; in some instances the loss of flesh is so great as to rival that seen in malignant disease and owing to the absence of dropsy the loss of flesh is obvious and attracts notice. Another not uncommon feature is the occurrence of pigmentation, leading to marked darkening of the complexion and the skin generally, and I have known of a case erroneously diagnosed by a very competent observer as one of Addison's disease. The inaccuracy of the diagnosis in this case was confirmed by a post-mortem examination. Many of these patients seek advice on account of headache and impairment of vision and it is not uncommon for an erroneous diagnosis of tumor cerebri to be made in such cases.

In exceptional instances profuse hæmaturia may occur dependent apparently upon hæmorrhage into some portion of the urinary tract, probably the renal pelvis, and I have seen a case where owing to the loss of flesh and the hæmaturia an erroneous diagnosis of malignant disease of the kidney was made. The great majority of these patients, however, seek advice owing to the development of uræmic complications not only of a very severe type but of very sudden onset. Thus a man apparently well may be seized with violent epileptiform attacks presenting very great similarity to ordinary epilepsy and yet on examination the characteristic dilute, highly albuminous urine may be found together with well-marked neuro-retinitis. In other cases the occurrence of one of the so-called uræmic rashes may be almost the first symptom that attracts the patient's attention apart from lassitude and vague malaise. This form of Bright's disease

is, in my opinion, extremely insidious and very liable to be overlooked owing to the equivocal characters of the symptoms produced. The diagnosis is not usually difficult owing to the fact that the urine presents well-marked changes and such patients when they come under observation nearly always present well-marked signs of neuro-retinitis. In fact, this lesion is more intimately associated with this variety of renal disease than with any other. A very large proportion of the cases that have fallen under my own observation of this form of Bright's disease have occurred in young women and some years ago I published a series of such cases. In many of these cases the appearance of the patient, and even the symptoms that they first complain of, may suggest that they are suffering simply from an exaggerated form of chlorosis. The presence of marked emaciation and also the well-marked changes in the disc are, however, sufficient to prevent this error being made.

The relation of syphilis to Bright's disease is also a matter of considerable clinical importance, as it is not uncommon for patients during the secondary stage of syphilis or within the first two years of infection to suffer from renal complications which are indistinguishable in many respects from Bright's disease. The urine in such cases is liable to contain very large quantities of albumin and it is not uncommon for it to become solid on boiling and one of the peculiarities of the malady is that notwithstanding the very large amount of albumin excreted the patient may present few of the other symptoms of Bright's disease. Thus dropsy may be entirely absent and the malady is perhaps more accurately classified as a nephritis but it differs from the ordinary nephritis associated with acute infective diseases in its persistence, or, at any rate, its long duration. Some of these cases of syphilitic nephritis are fatal, notwithstanding the fact that they do not present many of the other symptoms associated with Bright's disease. Thus the effects may be entirely confined to the urine, no dropsy or cardio-vascular phenomena developing, and yet the patient may become markedly uræmic. In some instances death may occur from cardiac failure, but one of the most remarkable features of the malady is the fact that notwithstanding the large amount of albumin excreted and its long duration it may ultimately clear up altogether. Thus I have known such a case where albuminuria amounting to some 4 per cent. was present for over six months in a young man who had contracted syphilis in the previous year, but ultimately the albuminuria entirely cleared up and the urine returned to its normal character. This is certainly very exceptional in other forms of Bright's disease where the urinary changes are equally well marked.

We see from the consideration of the preceding statements that the maladies coming under the definition of Bright's disease and those related to Bright's disease may be regarded as consisting of: (1) nephritis; (2) acute Bright's disease; (3) two forms of chronic Bright's disease; and (4) the granular kidney. It must be admitted that these various maladies not only present considerable points of resemblance both from the anatomical and from the clinical standpoint but also from that of etiology. There can be but little question that our views as to the mode of production of renal disease are undergoing changes at the present time. Formerly two factors were regarded as playing a very important part in the production of renal disease: (1) the relation of the state of the blood-vessels of the kidney to those of the body at large; and (2) the influence of cold on the renal circulation. Congestion of the kidney was supposed to be brought about as a result of reflex excitation of different parts of the body and more especially of the lower urinary tract. Physiological observations show that the kidney is very abundantly supplied with vaso motor nerves, these nerves reaching it from a very extended region of the cord beginning at the sixth dorsal and going down to the third lumbar. Notwithstanding this very abundant supply of nerves reflex excitation applied to almost any part of the body produces constriction of the renal vessels rather than dilatation. So much so is this the case that the only afferent nerves the excitation of which will produce dilatation of the renal vessels are the central ends of the posterior roots of the lower dorsal and upper lumoar nerves. Stimulation of these roots undoubtedly produces a well-marked dilatation of the renal blood vessels and it is probable that the fibres contained in these roots are derived from the abdominal and pelvic viscera. Although the dilatation obtained from the posterior roots is very striking, stimulation applied in the laboratory, at any rate, to the bladder and to the lower part of the genito-urinary tract, has not produced any marked effect on the renal vessels; still it must be admitted that there is experimental evidence in favour of the view that dilatation of the renal vessels can be produced by excitation of certain afferent nerves. Cold has long been credited with the production of acute congestion and even of inflammation of the kidney, just as formerly inflammation and congestion of other organs were also associated with this agent. There is no experimental evidence showing that the application of even intense cold to the surface of the body is capable of producing any marked effect on the renal vessels and although there are instances in which disease has seemed to follow exposure to cold it is more than probable that this is erroneous and that some other agent has really been effective in producing the disease. While experimental researches show that there is little basis for the view that reflex vascular disturbance or the application of cold is capable of producing marked changes in the renal circulation it must be admitted that the excretion of urine may be profoundly affected by reflex and other excitations of the nervous system; at the present time it is uncertain whether these are directly associated with vascular changes that have escaped observation or whether they are in part independent of marked vascular changes.

Although experimental observations make one hesitate in accepting the view that reflex excitation and the action of cold are important factors in producing vascular and other changes in the kidney there is a considerable body of experimental evidence in favour of toxic agents producing very marked effects on the kidney. The progress of knowledge has shown that diseases of many organs such as the pericardium, peritoneum, lungs, and pleura which were formerly imputed directly to cold are really dependent on the action of toxic agents or of organisms producing toxic substances and it would certainly seem as if the same were true of the kidneys and that the future will show that toxic causes play a greater part in the production of renal disease and that reflex and other disturbances of the nervous system and cold play a less part.

Many substances are known to have a distinct toxic action on the kidney of different grades of severity and not only is this the case but many of these substances have a differential action and produce effects closely resembling those seen as a result of disease. Thus some poisons like cantharides produce extreme congestion and engorgement of the renal vessels, the changes being especially marked in the glomeruli, and in some respects they are very similar to those seen in scarlatinal nephritis, so that it is almost justifiable to recognise a group of poisons of which cantharides and the scarlatinal virus are the most striking instances characterised by having an almost differential action on the glomeruli. Other substances, like the metallic poisons lead and mercury, produce necrotic changes in the epithelium of the tubules. Other substances, of which vinylamine, putrescin, and cadaverin are examples, produce well marked changes in the epithelium of the organ which differ somewhat from the necrotic effects seen in the case of the mineral poisons. All these renal poisons are definite and more or less well known substances with the exception of the scarlatinal virus, the nature of which is unknown. But there are many other renal poisons of more obscure nature but the existence of which is certain and a knowledge of these poisons could not fail to throw light on the nature of the renal lesions that are produced in disease by toxic agents as yet unknown. There are a number of highly complex organic poisons such as ricin and abrin which will produce definite changes in the renal structures and there are also other substances present in the blood of certain animals, more especially of the eel, which produce well-marked changes in the kidney. Slighter effects are produced by the blood of almost all animals and the albuminuria that is seen as a result of the injection into one animal of the blood of another shows how delicate the response of the kidney is to the introduction of any foreign or extraneous material into the blood. The most remarkable instance of a complex renal poison is, I think, afforded by the production of a so-called anti-renal serum. The injection into an animal of an emulsion of kidney of another species is followed by the production in the first of anti-bodies capable of acting destructively on the renal cells. By treating a rabbit for some little time with emulsion of guinea-pig's kidney it is possible to produce in the rabbit a serum the injection of a few drops of which is capable of producing not only gross anatomical changes in the kidney but of causing death from suppression of urine.

Although such results as these have no direct bearing on

the etiology of renal disease they afford very striking evidence that renal poisons of a highly complicated character may be present in the blood. One of the simpler renal poisons is bichromate of potassium and this is a substance that lends itself to experimental investigations. Bichromate of potassium produces necrosis of the renal cells and if it be injected into the blood stream generally will cause death in a few days by bringing about suppression of urine. There are several points of interest in connexion with its action and one very striking one in my opinion is the fact that although it may cause death owing to its widespread action on the kidney, the whole of the tubular epithelium becoming necrotic, the albuminuria that it produces is usually slight in amount. It is possible by injecting the bichromate of potassium into one renal artery to destroy the epithelium of that kidney without producing any marked effects on the opposite kidney and thus the animal survives the experiment in good health. In such instances the epithelium of the kidney into which the bichromate has been injected undergoes necrosis and is shed and consequently the kidney itself dwindles in size, undergoing an apparent atrophy. It is of some interest that, notwithstanding the diminution in the size of the organ and the great destruction and shedding of the epithelium, there is no overgrowth of fibrous tissue The result of this experiment would seem to point to the conclusion that the overgrowth of fibrous tissue with which we are so familiar both in Bright's disease and in granular kidney is not dependent on the mere destruction of the epithelium by the action of a toxic agent but rather that it is associated with the prolonged action of a poison of some kind, in other words, that the overgrowth of fibrous tissue is not merely consecutive to the epithelial destruction but that it is developed synchronously with this.

The renal lesions produced experimentally by the action of toxic agents do not lead to the production of dropsy, and this can scarcely be dependent on the fact that the duration of life is so short since clinically dropsy may appear in acute Bright's disease in a very few days. The experimental results are more strictly comparable to those seen in nephritis and they are really quite in accord with the clinical facts observed in other renal diseases. It has long been known that complete suppression of urine occurring as a result of calculous disease, or even in the last stages of cystic disease, is usually unaccompanied by any anasarca. The conclusion seems to be almost justifiable that we may regard the various forms of nephritis as produced by a toxic agent acting on the renal element, and in Bright's disease where dropsy is present the toxic agent produces effects not only on the kidney but also probably on the vessels of the body generally. This at the present time is, of course, a mere hypothesis, but still a considerable number of poisons are known which are capable of producing dropsy presumably by their action on the walls of the vessels. It is certainly difficult both in the light of the experimental results and also from the study of renal diseases other than Bright's disease to correlate the dropsy directly with the renal lesions. In other words, dropsy should be looked upon as a characteristic feature of a particular malady—namely, Bright's disease—rather than as a phenomenon of renal disease in the broad sense of the word.

Diagnosis.—The diagnosis of Bright's disease does not in the great majority of cases present any great difficulties and this is more especially true in acute Bright's disease and in the chronic form of the malady where dropsy is present. Acute Bright's disease has to be distinguished from nephritis and from infarction of the kidney. In exceptional instances hæmorrhage may occur from the renal tract in chronic Bright's disease and thus an erroneous diagnosis of an acute lesion may be made where really the malady is chronic. In some of these cases the hæmorrhage is very profuse and would seem to be derived from the vessels of the renal pelvis, and in such cases the absence of blood casts may be of assistance in recognising the condition. The form of chronic Bright's disease where dropsy is absent is, however, a malady that may very readily be overlooked and the sudden occurrence of symptoms, often of a uræmic character, may lead to an erroneous diagnosis in the final stages of the illness. In some instances where vomiting and loss of flesh have been marked features an erroneous diagnosis of gastric disease and even of malignant disease of the stomach has been made. The error most likely to be made is to regard these cases where the onset of uræmic symptoms is extremely sudden as dependent on gross intracranial disease. Epilepsy and tumour of the brain are the two maladies that are most likely to be erroneously diagnosed. On the other hand, the symptoms produced by even well-established chronic Bright's disease may be apparently so trivial as to lead to an erroneous diagnosis of chlorosis or even of neurasthenia or some other functional disturbance. A mistake such as this has not uncommonly been made even when the patient's condition is such that the duration of life is measured only by days. I do not think that too much stress can be laid on the fact that this malady so very commonly runs a prolonged latent course or one where symptoms are extremely slight and equivocal and then a sudden and fulminating uræmia may occur leading to death in a few hours or at the most in a few days. In some exceptional instances the first sign attracting attention to the grave underlying malady has been the occurrence of a uræmic rash. The mistake of entirely overlooking the disease or of confounding it with some other malady such as tumor cerebri may usually be avoided by a complete examination of the urine, of the state of the heart and vessels, and of the condition of the fundus oculi. There can be, however, no doubt that both chronic Bright's disease and some forms of granular kidney may not only reach a high degree of development but may be fatal without the production of any appreciable cardiac hypertrophy or arterial degeneration, so that the absence of these signs is not always conclusive. It is, at any rate, doubtful whether chronic Bright's disease is ever fatal from uræmia where albuminuric retinitis is absent, although, of course, this malady may cause death from some intercurrent affection when albuminuric retinitis is not present.

Most of the mistakes in overlooking chronic Bright's disease arise from the fact that the patient does not present obviously renal symptoms and hence the urine is not examined. In some cases a differential diagnosis of renal disease from gross intracranial affections is practically impossible, as, for instance, where multiple tumor cerebri occurs along with albuminuria. But such conditions as these are of extreme rarity and of no great practical importance.

The differential diagnosis of one form of renal affection from another is also a problem which occasionally presents difficulties. Apart from those already mentioned above the most important is the recognition of the so-called physiological albuminuria and the separation of chronic Bright's disease from amyloid disease, and in some instances from even such conditions as mere passive congestion of the kidney and cystic disease. The diagnosis of Bright's disease from amyloid disease is generally to be made by a consideration of the state of the vessels, the character of the urine, sometimes the presence of waxy casts, and the recognition of the presence of a cause capable of giving rise to albuminoid degeneration. The separation of Bright's disease from amyloid disease is a matter of great practical importance owing to the totally different treatment required in the two affections.

The differential diagnosis of Bright's disease from mere passive congestion, especially in heart cases, is a most important one from a prognostic point of view. In the great majority of instances such a diagnosis may be made by paying attention to the character of the casts present in the two instances and also by the difference in the specific gravity of the urine and by such general considerations as the fact that renal congestion is most likely to be present where there are other signs of distension of the venous system, but it must be admitted that in some forms of morbus cordis combined with albuminuria it is extraordinarily difficult to determine with certainty whether the cardiac lesion is primary and the renal lesion mere congestion or *vice versâ*. I have known of a case where the clinical symptoms, both as regards the form of cardiac enlargement and the character of the urine and the presence of arterial degeneration, seemed to point to the conclusion that the renal lesion was primary and the cardiac secondary and where the necropsy showed that the kidneys were merely passively congested as a result of calcification of the pericardium. Physiological albuminuria presents greater points of resemblance with the clinical picture of a granular kidney than with that of Bright's disease and the latter malady has usually to be excluded on the ground that the albuminuria is not only variable but is really the only sign of disease present. The postural character of the albuminuria is no doubt a factor of some importance, but it must be borne in mind that this is also a characteristic of the albuminuria of organic disease.

The differential diagnosis of the two forms of chronic

Bright's disease from one another is to be made mainly on the character of the urine, especially as regards its quantity and the amount of albumin, because in both forms of disease the specific gravity may be low, on the presence or absence of dropsy, and on the degree of development of the cardio-vascular changes and of neuro-retinitis.

ABSTRACT OF

The Fitz Patrick Lectures

ON

THE HISTORY OF MEDICINE.

Delivered before the Royal College of Physicians of London on June 23rd and 25th, 1903,

BY JOSEPH FRANK PAYNE, M.D. OXON.,

FELLOW AND HARVEIAN LIBRARIAN.

LECTURE II.[1]

Delivered on June 25th.

ANGLO-SAXON MEDICINE.

MR. PRESIDENT AND GENTLEMEN,—Beside their native herbal medicines and the more scientific therapeutics and pathology which they had borrowed from the Greeks the Anglo-Saxons made a large use of charms and what are called magical rites in the treatment of disease. It would be a mistake to suppose, as is sometimes thought, that this was their only or chief method of treatment or that it was in any way peculiar to the Anglo-Saxons. A great deal of it was taken from the later Greek and Latin medical writers who show a credulity and superstition quite equal to that of the Anglo-Saxons. Again, the magical and superstitious medicine lasted much longer than the Anglo-Saxon period. It went on all through the Middle Ages up to recent times and is not extinct even at the present day. But it is by no means characteristic of our own country. Indeed, the numerous collections of "folk-lore," or what is called "folk medicine," from the peasantry of continental countries show that these ancient superstitions are more prevalent and more inveterate among them than they are among our own people. What is most remarkable is not only that the same general beliefs have survived but that the very same forms of words have in many cases been preserved for centuries and may be even now recited in certain places.

It is very difficult to define precisely what is meant by magical medicine or what by charms. But, broadly, they imply a belief in some supernatural efficacy belonging to verbal formulæ, recited or written, in special circumstances or with reference to special objects. Originally it would seem that this belief implied also the belief in spirits, demons, or some supernatural beings who could be either conciliated or coerced by the use of certain words. The belief in supernatural personages gradually waned and in the case we are now considering heathen or mystical conjurations were to a large extent replaced by Christian prayers and benedictions, while the occult rites of unknown origin were superseded by the services of the Church.

Without pretending to a complete classification the various magical processes and charms may be brought under the following heads: 1. Prayers or invocations addressed to medicinal herbs or to supernatural beings supposed to have power over them. 2. Special verbal formulæ or observances employed in collecting the medicinal herbs or other natural remedies. 3. Prayers and mystical words repeated over the patient or written and applied to some parts of his body, with or without ordinary remedies. Such words are very often in a foreign tongue unknown to those who use them, such as Latin among the barbarous or uneducated, Greek or Hebrew among the Latins, and so on, sometimes in a quite unknown language, which have been called Ephesian charms. But they may also be in the vernacular. 4. Direct conjurations or exorcisms addressed to diseases as if they were evil spirits. 5. Narrative charms—that is, trivial stories relating to sacred or legendary persons who suffered from or did something analogous to what the patient is suffering from. 6. Material magic—that is, the attribution of magical power to certain objects, such as plants or parts of animals, stones, or engraved gems called amulets, these objects being not used medicinally but applied in some way to the patient's body. 7. Transference of disease, by a magical formula or ceremony, to some animal or material object or in some way to the outside world. Examples of all these can be found in older medical literature as well as in the Anglo-Saxon books and also throughout succeeding centuries.

The actual origin of these beliefs and practices is extremely obscure and cannot here be considered. Doubtless there was an element of traditional popular belief in each particular country and also, as regards European medicine, an introduction of Oriental superstitions. But they formed no part of the regular classical medicine of the Greeks and Romans till the period of its decline. Hippocrates, Galen, Aretæus, and Celsus are entirely free from such superstitions. The first Greek medical writer of any repute who introduced the incantations into the practice of medicine was Alexander Trallianus, who has been already referred to as having been a great authority with the Anglo-Saxon leeches. Alexander has been blamed, and justly, for thus lowering the character of Greek medicine. He was, however, followed in this by later Greek physicians and by those late Latin writers to whom the Anglo-Saxons were much indebted. The Latin work of Marcellus Empiricus, older than Alexander, which appears to be partly founded on Roman popular medicine or folk-lore, was the great repertory of superstitious rites and formulæ.

On examining the Anglo-Saxon charms a considerable number are found to be directly taken from, or founded on, passages in the late Latin writers; a few are suggestive of passages in the Greek physicians. From all these sources it is easy to find examples of the various kinds of magical medicine above spoken of.

1. The invocation of herbs is found in Alexander Trallianus. For instance, he recommends as a remedy for gout that the sacred herb hyoscyamus, or henbane, should be dug up with certain precautions and addressed as follows: "Sacred Herb! I summon thee to the house [of my patient] to stop the rheum of his feet," &c.; "I conjure thee by the great name Jaoth Sabaoth." The Anglo-Saxons did not use prayers addressed to the herbs themselves, as benedictions and Christian prayers addressed to God or the saints were often substituted. But there are instances of certain formulæ of conjuration. For instance, the herb mugwort (artemisia) had the reputation of preventing a man who carried it with him from getting tired on a journey. But it was to be gathered before sunrise with these words, "*Tollam te, Artemisia, ne lassus sim in viâ.*"

2. Special words and mysterious rites were often made use of in gathering medicinal herbs to give them special virtue. The formulæ used by the Greeks and Romans being generally heathenish, the Anglo-Saxons often substituted Christian prayers. For instance, for gathering celandine the directions are: "Delve round the root and take it up with thy two hands turned upwards, and sing over it nine paternosters, and in the ninth, at the words 'Deliver us from evil,' snap it up, &c." There are also some very remarkable Anglo-Saxon "lays"—poems celebrating the virtues of herbs. In one of them Wodan is referred to, showing that it must have originated in heathen times. In many of the directions for gathering herbs the essential thing was *to name the sick man and his father*. This was a popular belief among the Romans, as quoted by Pliny. For the old ceremonies the Anglo-Saxons often substituted prayers and litanies. Thus before gathering certain herbs litanies of the saints and the paternoster were to be sung in church. Then the clergy or choir were to go three times round the herbs intended to be gathered singing the same. The herbs were to be brought into the church with the same song and 12 masses sung over them in honour of the Twelve Apostles. Then they could be used.

3. The most important part of magical medicine consisted in mystical formulæ, conjurations, and prayers either uttered over the patient or written out and in some way applied to his body. Many, or perhaps all, were, it would seem, originally meant to be sung, as shown by the words "*carmen*" and "*incantamentum.*" These were well known among the Greeks and many instances might be quoted from the poets of wounds being healed by the use of magical words. Alexander Trallianus recommends for the gout that a certain verse of Homer (Iliad II., 95) should be written on a gold leaf while

[1] Lecture I. was published in THE LANCET of June 27th, 1903, p. 1795.

the moon was in the sign of Libra, wrapped up and applied, presumably to the patient's joints. Why this particular verse was chosen does not appear; it would not seem specially appropriate.

The Anglo-Saxon charms were mostly in Latin, sometimes with corrupted Greek or possibly Hebrew words. One charm is described in the book as Scottish, but according to the editor the words belong to no known language. On the other hand, in another case, the apparently unintelligible words turn out to be corrupt Irish. In some the words seem to be without doubt mere rhyming or jingling nonsense—as, for instance, "*Gonomil, orgomil, marbumil*, &c.,"—words which were to be sung into the *right* ear of a man but the *left* ear of a woman in case he or she had swallowed a worm in drinking water. The use of such charms was often combined with the use of drugs. In one prescription a drink made of 12 herbs over which seven masses had been sung was to be drunk out of a church bell with the accompaniment of singing certain psalms. Also the mass priest was to sing a formula of benediction over the patient. This was for a "fiend-sick" man—that is, a demoniac or lunatic. Sometimes charms were written on the "holy dish," or sacramental paten, and washed off with holy water which was to be drunk.

4. Exorcisms addressed to diseases as evil spirits are not common. An example is a charm for a strange "swelling." The sufferer was to sing a paternoster, to draw a line round the sore, and to say, "*Fuge diabolus! Christus te sequitur.*" There is an elaborate charm against agues and fevers in which they are adjured in the name of Christ to depart. A form of words against "poccas"—that is, small-pox—is remarkable because this word is taken as the equivalent of variola. Many formulæ of this kind are found in late Latin writers.

5 *Narrative charms.*—This class of charms was used by the late Romans—for instance, by Marcellus Empiricus and probably in still earlier times. In the Anglo-Saxon books they are always scriptural stories or else Christian legends. One of the most extraordinary, or most absurd, is against toothache. It relates how when Christ was sitting with His disciples Peter looked sad and when our Lord inquired the cause he complained of toothache, whereupon Christ uttered a long adjuration addressed to migraine or other pains not to harm the servant of God. This was, of course, to be repeated. The story of Longimus, the traditional name of the centurion who pierced the side of Christ upon the cross, was told in order to take away a stitch in the side. To hasten child-birth the story of the raising of Lazarus with the solemn words, "Lazarus, come forth!" was thought to be efficacious. All these narratives and others like them were used not only by the Anglo-Saxons but frequently in the Middle Ages.

6. *Amulets derived from natural objects.*—As a preservative from fits a fox was to be caught, its canine tooth knocked out while it was alive, and the animal then set free. The tooth was then to be wrapped in a fawn skin and carried on the body. The eyes of a crab removed from the living animal were good for affections of the eye if hung round the neck. In all cases the animal was to be kept alive. For headache certain herbs were to be bound on the head with a red fillet. There are many similar prescriptions in Alexander Trallianus and Marcellus Empiricus.

7. *Transference of disease.*—It is a common belief in many parts of the world that disease is something which can be got out of the sick man and transferred to something outside. The Anglo-Saxons had mysterious rites, sometimes combined with forms of words, for this purpose. Often the disease was transferred to running water. Thus for a certain skin disease it is ordered to *score* or to scarify the neck after the setting of the sun, to pour the blood silently into running water, to spit three times, and to say, "Have you this evil and depart away with it." Or, again, a hazel or elder stick was to be taken, a name written upon it, and stained with blood. Then it was to be thrown over the shoulders or between the thighs into running water. In another case an oaken stick was to be stained with blood, then four strokes were to be made with it towards the four quarters of heaven. Then it was to be thrown away and a certain charm was to be recited. This was a charm against "flying venom," or, in modern phrase, air-borne contagion.

Later books of Anglo-Saxon medicine.—One book contained in the three volumes of "Leechdoms" differs a good deal from the rest. It is that which bears a Greek title, "Περὶ Διδάξεων," interpreted as meaning "Of Schools of Medicine." This title, however, only refers to the first chapter of the work. The rest consists of a collection of medical receipts differing from those in the other books of the Anglo-Saxon library. It is entirely free from charms and superstitions and the prescriptions are for the most part simpler than those of the Anglo-Saxon leeches. This treatise has been shown by a German philologist, Dr. Max Löweneck, to be based upon a Latin work belonging to the first period of the school of Salerno—viz., the Practica of Petroncellus or Petronius—a work written probably about A.D. 1035 and printed in the "Collectio Salernitana." One fragment has been traced to the writings of another Salernitan teacher, Gariopontus, of the same period. But these identifications do not account for the whole of the Anglo-Saxon text, and it does not seem that this was translated directly from the Latin. The actual origin of the work is therefore still somewhat obscure. The date of this manuscript is the first half of the twelfth century, probably before 1150. It shows that the Anglo-Saxons were beginning to profit by the teaching of the school of Salerno before that school was influenced by the Arabian medicine. It also shows that the Anglo-Saxon medicine like the other written literature of that language went on for some time after the Norman Conquest. To this same period belongs another manuscript which contains a version of the Herbarium of Apuleius later than that previously spoken of. This is not included in the Rev. O. Cockayne's "Leechdoms" but has been published in Germany, as edited by Herr Berberich. This manuscript is referred to the middle of the twelfth century, about 1150. It therefore touches on the extreme limit of Anglo-Saxon written literature, and, indeed, is called by Herr Berberich "Early Middle English"; but, like the last-mentioned work, it shows the long continuance of Anglo-Saxon medicine after the Conquest. This work closes the early English medical library and as the celebrated Anglo-Saxon Chronicle came to an end in 1150 the general literature and medical literature of our early ancestors reached their limit about the same time.

A Clinical Lecture
ON
DYSENTERY AND INTESTINAL HÆMORRHAGE.

Delivered at St. Bartholomew's Hospital

BY SIR LAUDER BRUNTON, M.D., F.R.S., &c.,
PHYSICIAN TO THE HOSPITAL.

GENTLEMEN,—There are three cases in the wards to which I think it may be worth while to draw your attention. All these cases suffer from a discharge of blood from the rectum. This is not at all an uncommon thing. My old teacher, Professor Syme, used to say that two out of three people past middle age suffered from piles. And as many piles bleed, it is quite natural that a discharge of blood should be very frequent. But these cases to which I refer are not cases of piles. I thought that as I have to mention piles it might perhaps be worth while to bring with me some copies of a paper upon piles which some of you may wish to have afterwards.[1] In cases of piles the amount of discharge may be very great indeed and when very long continued it may drain the man of much blood. But very frequently the discharge of blood from piles appears rather to make the man more comfortable and to afford him relief. I once had a patient, a sea captain, who suffered very badly from piles—so badly, indeed, that when he was standing on the bridge of the boat the piles would bleed to such an extent that his duck trousers would be soaked through and through with the blood. That, of course, was very inconvenient, to say the least, because everybody standing on the deck could see what was happening to the captain. Notwithstanding this he objected to have any treatment which would arrest the bleeding because it did him so much good. Usually the discharge of blood from piles either squirts out into the

[1] On the Treatment of Piles and Allied Affections. Reprinted in Disorders of Assimilation.

pan so that you may see drops of blood scattered about it, or the blood covers the surface of the motion more or less completely. Usually these cases do not present any mucus on the surface of the motion and if mucus be present the blood is not mixed with it. There may be mucus upon the motion but separated from the blood.

Of the three cases which I have alluded to one is in Rahere ward and two are in Elizabeth ward. The one in Rahere ward is that of a man who has been out in South Africa where he was very seriously wounded. He got dysentery and instead of recovering rapidly, as most of the other men did, he recovered only very slowly. Neither did he gain very much benefit on the voyage as most other men did. When he came into the hospital here he stayed for some months without improving at all satisfactorily. At last I thought it might be well for him to leave the hospital for a time, because a change of air sometimes does enormous good in dysentery. He did so and improved in general health, but the local condition still remained bad and so he has come back to the hospital. Dysentery is a disease of which we have heard a very great deal in South Africa. It is a disease which is exceedingly painful and it pulls a man down frightfully. Two or three years ago I had a letter from the late Sir William Mac Cormac dated from South Africa. It was the first day on which he had been up after a very bad attack of dysentery. He apologised for the brevity of his letter by saying that what with the dysentery on the one hand and the sulphate of magnesium which he had been taking as a remedy on the other hand, he was so weak that he could hardly hold the pen. The kindliness of the man showed itself very much in writing to a friend under such conditions as that. The treatment of dysentery which has been used in South Africa has been that of sulphate of sodium and sulphate of magnesium. Therein the treatment of the condition differs greatly from what used to be the case in India. But the treatment in both cases has been to a certain extent what you may call the "evacuant treatment," a kind of treatment which used to be in great vogue long ago—namely, clearing out the offending materials and thus trying to allow the organism to recover itself. The symptoms of dysentery sometimes come on pretty quickly. They are great pain in the abdomen and diarrhœa, the motions containing mucus and blood. Now, the pain is of an extremely severe character. In passing along one of the streets leading to the hospital, I have often seen in a shop window a washing-machine and when I was in India I had dysentery, and thought the pain seemed as if I had got that washing machine inside my bowels and it was going round and round. And that is the character of the pain in dysentery. The position of the pain is very often uncertain; it seems to attack the whole abdomen and it is very severe all over, though, perhaps, it is worst about the navel. The tenderness which accompanies the pain may have different seats, according to the position of the ulcers which occur in dysentery.

But before proceeding to talk of the pathology of dysentery, I think I may just remind you of what probably you may all have seen. If you look up the nostril when you get a cold in the head you will find that the mucous membrane is red—that is to say, much redder than usual. If you touch it you find it is velvety and hot, and if you look further up into the nose you may see little streaks of mucus lying about in the nose. This mucus may be tinged with streaks of blood, and not infrequently you may notice that the mucous membrane itself is abraded. You rarely find deep ulceration, but there is often superficial abrasion. What takes place in inflammation of the mucous membrane of the nose which you can see takes place also in inflammation of mucous membranes which you cannot see; the process is the same in both. There are the redness, the turgescence, the heat, the exudation of mucus, and sometimes serous exudation occurs in the nose also. There is also the formation of pus upon the surface, abrasion of the surface, and possibly a deep ulcer. In the case of dysentery all these changes occur in the intestine. The whole of the large intestine may be invaded, but there are two parts which appear to be specially affected by this disease, and these are the sigmoid flexure and the rectum. It is in these two places that ulcers tend to become most numerous and most severe. You can see the reason why, because these are the two spots in the intestine where you are likely to have a local irritation superadded to the general condition. It is just there that the fæcal matter tends to rest and will while resting there act as an irritant.

According to the position of the ulcer, so you have the position of the tenderness, and so, to some extent, you have the seat of pain and the symptoms varying. If the ulceration is most severe in the cæcum the tenderness will be most marked at that part, and the motions will be of a somewhat different kind from those which occur when the ulceration is chiefly in the rectum or in the sigmoid flexure. In the latter case you are very likely to have a severe tearing, grinding pain in the abdomen, followed by a sudden call to the closet, a call which is so imperative that you must go whatever else you lose. And then there is a discharge. Very often at first it may be abundant, but afterwards it is scanty, and there may be a good deal of mucus mixed with blood. If the ulceration is chiefly in the cæcum you do not get so markedly the tenesmus which is so common and distressing when the ulceration occurs in the rectum. The ordinary stimulus to defecation is the presence of something in the rectum. So long as fæcal matter is present only in the sigmoid flexure there is very little tendency for movement of the bowels; fæcal matter may lie in that flexure for hours and hours without arousing the least desire for defecation. But when the fæcal matter finds its way into the rectum the case is different and there at once it excites a reflex tendency to evacuate, and if the irritation in the rectum is not due to the presence of fæcal matter but to an ulcer the tendency to defecation is still induced and mere congestion may have the same effect. So ulcers in the rectum give rise to a desire to defecate so exceedingly frequent that in severe cases no sooner has the patient emptied his bowel and got rid of a small amount of blood-stained mucus than he wants to go again, and this constant and distressing desire to evacuate becomes one of the greatest trials to the patient.

You can readily see that in a case where all this irritation is present the first thing to do will be to remove the source of irritation, if that be possible. Now, in the normal fæces you may find that there is present an amœba, one of the lowest forms of animal life, which throws out pseudopods, and this does not seem to have any pathogenic power in ordinary circumstances. But under other conditions it apparently acquires a pathogenic power and an amœba which has little to distinguish it microscopically from the amœba coli is found in dysentery and is called amœba dysenteriæ. A good deal of the pathology of the disease appears to depend upon the amœba because it has been found that similar symptoms have been induced by the injection of almost pure cultures of this amœba into the rectum of animals. Dysentery is not infrequently followed in patients by an abscess in the liver. It is almost impossible to get from the intestine itself anything like a pure culture, but in cases of abscess of the liver the pus has been found to contain the amœba almost pure—that is to say, unmixed with other organisms—and this pus injected into the rectum of animals has been found to produce symptoms of dysentery.

The oldest method of treating dysentery which has been found at all successful was that by a large dose of calomel. This method of treatment has gone a good deal out of vogue but it was a very rational treatment. The two-fold action of the calomel was to clear out of the bowel any offending substances and to act as a disinfectant, because calomel does become to a slight extent converted into a soluble salt of mercury, and, as you know, the soluble salts of mercury are amongst the most powerful disinfectants which we possess. So the old treatment by means of calomel was very good and added to this was some opium or some solution of opium. Anyone who has suffered from dysentery knows that opium is exceedingly grateful to the patient, because it quiets, for the time at least, the severe sufferings which dysentery occasions.

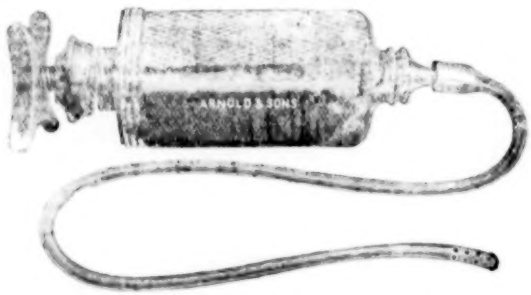
The next treatment to calomel in point of time, I suppose, was castor oil. I am not quite certain about the comparative dates. But the treatment by castor oil was an exceedingly good one. It was discovered, or first employed, by the late Dr. Baly whose portrait is in the great hall of the hospital. He was physician to Millbank Penitentiary and there was always a form of dysentery endemic there which resisted nearly every other form of treatment except that by castor oil. In the hospital pharmacopœia we used to have a preparation for that, but it has been expunged since the introduction of the mistura olei ricini into the British Pharmacopœia. It was castor oil in which you had about 10 minims of castor-oil made up into an emulsion with either mucilage of acacia or with liquor

potassæ. Either of these makes a very fair mixture, but I think probably the best is either to make it up with mucilage of acacia or yelk of egg. This dose, given three times a day, tends to clear out all the organisms from the intestine, and more than that it seems to have an astringent action afterwards, so that it acts as a curative measure, not merely as a palliative. Another treatment which was formerly used largely in India was the administration of ipecacuanha in doses of 30 grains of the powder. Very often it happens that if you give more than 30 grains of ipecacuanha the patient cannot retain it but vomits it almost immediately; but if you give him a second dose he may retain it after he has vomited the first. And this is the plan which was frequently adopted. Sometimes when the stomach was peculiarly irritable instead of giving one and two doses of ipecacuanha without anything else, the plan was followed of giving the man, say, 20 minims of tincture of opium, leaving him for 15 minutes to let the opium exercise its sedative effect upon the stomach and then giving him ipecacuanha. I found out, however, for myself that if you raise your head after a dose of ipecacuanha you are very apt to be sick but if you can manage to keep your head flat upon the pillow you are not sick. So I fell upon the plan of having instead of a basin an ordinary dinner plate laid upon my bed, and after taking the ipecacuanha I laid my head down and brought the plate up to my lips. In this way I kept the ipecacuanha down as well as I could. I found that a little would come up, but very little, and for that the plate was sufficient. But if I had raised my head to be sick probably the whole of the ipecacuanha would have been brought up. As I have said, in the present epidemic in South Africa instead of using these old-fashioned methods, most of the men have been employing sulphate of magnesium and sulphate of sodium. The action of these is to clear out the intestine and therefore to clear out the organisms which may be there keeping up the disease. There is one point about the disease, however, which it is difficult to explain and which I noticed very markedly indeed in my own case. After trying all the remedies I did not seem to get a bit better and many of the people said: "You will not get well until you leave Hyderabad; as soon as you go away you will get well." Just before leaving I was really very ill; I had excessive pain and great diarrhœa, so much so that I thought I would not be able to go into the train. Oddly enough, however, after getting into the train I became well. I still continued the milk diet upon which I had been living for a fortnight, but I had no further attack of pain and eventually became perfectly well after leaving the district in which I had contracted the disease. So there was probably some nervous element in the case as well, but it is a nervous element which is not individual to any one patient. Although I had that experience I was only one of many who had it; there were so many of them, indeed, that all the medical men there knew it as a definite fact that patients did not recover until they left. So in the case of the man in Rahere ward, I asked him to go away some months ago, because I thought very likely he might improve by going away, whereas he was not improving at all while he stayed in the hospital. I expect when he goes away again, as he shortly will, he will again improve and eventually get well. In his case recovery has been very slow indeed. I think it is possible that the slowness may have been due to damage of some of the intestinal nerves by a bullet which passed through him. The bullet entered the chest in front in the second left intercostal space four inches from the left margin of the sternum, passed through the lung as shown by the hæmoptysis it produced, and came out at the back half an inch below and half an inch to the right side of the third dorsal spinous process. How he comes to be alive now it is hard to say because the track of the bullet was such as to make it very difficult to see how it avoided the aorta. What he suffers from now is pain, chiefly upon defecation. The grinding pain in the abdomen is almost gone, but he has pain on passing his motions and there are a certain tenderness and burning feeling in the rectum. On examining the rectum an ulcerated spot was found at the back and we may conclude that although the intestine has healed up very much there is probably still some ulceration about the rectum and possibly also about the sigmoid flexure. We have been trying to remedy this by local treatment, by applying various astringent solutions and ointments. One varies these ointments very much. In some cases of rectal ulcer you may get the best results by treating the patient with a mercurial ointment, say, calomel ointment diluted with vaseline, for about a couple of days, and afterwards with bismuth and morphine. The reason these ointments have not been applied to this patient in the ordinary way is that the ulcer is very close within the anus, and if one were to dilate the anus with a speculum in order to apply the ointment we should almost certainly cause a great deal of pain, which would be quite out of proportion to what would be gained by the procedure. But in cases where the ulcer is a little higher up the rectum and where you find that the patient does not improve at all, it may be well to use the speculum to dilate the rectum and to apply an ointment. In this way you are able to see the progress of the ulcer and to vary your ointment a little more scientifically. If you happen to have to do this, as in cases of very obstinate ulcers, you apply your mercurial ointment for two or three days until the ulcer begins to take on an angry look and gets irritable, and then you cease applying the mercury and use a sedative ointment. Then you will generally find the ulcer healing up. But you can readily see that the ulcer will remain tender for a long time and it is very important that no hard motion should pass over it, because the mere mechanical scraping over the partially healed ulcer will denude it of the newly formed cells which tend to cover it, thus leaving the surface again sore and bare as before.

The other two cases in the wards are both of great interest. One of them is a man who also is passing blood and mucus in his motions. About three years ago this man after severe straining in consequence of constipation noticed that his motions were streaked with blood. After that he had rather too many motions and he noticed that he always felt after each motion as if there was something still to come away. Mucus and blood were nearly always present in the stools. He was treated with tannic acid suppositories and recovered. He had another attack of constipation and again he recovered. He volunteered the statement that I had seen him, but I had totally forgotten the case, though from the treatment which he said I recommended—viz., that of cold-water douches—I have no doubt that I found the mucous membrane of the sigmoid flexure partially prolapsed into the rectum. You know that in children the mucous membrane of the rectum very often becomes prolapsed outside the anus. In adults prolapsus of the rectum through the anus is very rare, but prolapsus of the sigmoid flexure into the rectum is by no means uncommon. You know that the rectum is fastened more or less firmly to the sacrum, but that the sigmoid flexure is loose and with great straining it may project itself into the rectum and there form an invaginated portion. This invaginated portion acts like an irritant in the rectum and the person is conscious of something in the rectum, which he supposes to be a fæcal mass, and so has the constant desire to defecate which I have mentioned and thinks that there is something to come away. As a matter of fact, there is nothing but mucous membrane and therefore the more he strains the worse he becomes. Sometimes he may sit for half an hour straining on the closet without anything coming away. In May, again after constipation, blood and mucus returned and he applied douches. A week afterwards the attacks disappeared for four days and then returned and remained the same until the end of August when the motions became more frequent. He was admitted into the hospital on Dec. 9th and on examination it was found that the mucous membrane of the rectum was "ballooned"—that is to say, that instead of it being like a tube which clung to your finger all the way along it was distended in the middle. Nothing else was to be found in the rectum until one came to its upper end and then something almost like an os uteri could be felt. This was simply the invaginated sigmoid flexure which had become hardened, thickened, and very tender, so that when it was touched the opening contracted spasmodically. There is very little doubt that in this case there was not only a certain amount of ulceration of the part which had been projected into the bowel but also higher up in the sigmoid flexure. This is by no means uncommon and it may give rise to very prolonged diarrhœa. The first case I ever saw was that of a planter from Assam who told me that for ten days he had been obstinately constipated and then took two pills, in consequence of which he had a very violent action of his bowels. He continued to have diarrhœa all the time afterwards for six months until I saw him. I found the mucous membrane

was invaginated in that way and so was acting as an irritant, causing constant diarrhœa. He had got no good from general treatment directed to the upper part of the bowel. When one treated him with sedatives to the sigmoid flexure he began to get well. It will take too long to go thoroughly into the treatment, but you can see the instrument which I have had made for this sort of thing.

I will now describe the other case, which is rather interesting, of a woman who was brought into the hospital with symptoms of gastric ulcer but in addition she was passing a good deal of blood. In appearance this blood was not like the blood which comes from piles or from an ulcer; it was much more generally diffused through the motions and especially when there was a loose motion after taking a saline aperient. On examination we found something different from the other two cases; we found that the mucous membrane was very soft and it felt almost like a bit of plush. We have not used the speculum, but in another case of the same sort which I saw with Mr. Harrison Cripps, in which he operated, just before operating he dilated the rectum very widely, so that it could be looked into very well. He hooked down a bit of mucous membrane so that one had it under one's eyes and it looked like a bit of red plush; it was thick and velvety and bled on the slightest touch. The treatment which he adopted for it was to take a cautery and to run it down the mucous membrane in lines, so that when the cicatrices contracted a pull would be exerted on the mucous membrane so that it would be tightened up and cease to bleed. That operation did afford relief but it has not cured the patient, although it was done many years ago now. So I have not felt inclined to repeat the operation upon this patient who is in the ward and I have contented myself at present with the use of astringent injections and by means of those, combined sometimes with astringent suppositories, we have obtained a great deal of good and I hope that we shall do more yet. I hope that it will not be necessary to have recourse to operation, nor will it be necessary to have an operation in the case of the man who has been out in South Africa.



Instrument for introducing ointment into the upper part of the rectum and into the sigmoid flexure. It is a modification of Allingham's ointment introducer, but is much larger and stronger. The piston is provided with a screw cap which fastens on to the body of the instrument. When the cap is free the piston works easily up and down by simple pressure, but when the cap is fixed the piston only works by screwing it round on the cap.

THE BRITISH ELECTRO-THERAPEUTIC SOCIETY.—The annual dinner of this society was held on June 26th at the Café Monico, Dr. H. Lewis Jones, the President, occupying the chair. 46 members and visitors were present. After the usual toasts, the President proposed "The British Electro-Therapeutic Society" and noted on the following points: the steady increase of members since the foundation of the society (January, 1902); the high scientific standard of the papers presented; the most useful discussions that had taken place during the past year or so; and the work of the council and honorary secretaries, more especially in ascertaining the eligibility of the candidates for election. Mr. Chisholm Williams (joint honorary secretary) replied. An excellent musical programme was arranged, Dr. A. E. Haydon being responsible for the violin solos, and songs were sung by Mr. Leslie Buchanan and Mr. Richard Evans.

ON THE FATAL EFFECTS OF CHLOROFORM ON CHILDREN SUFFERING FROM A PECULIAR CONDITION OF FATTY LIVER.

BY LEONARD G. GUTHRIE, M.A., M.D. OXON., F.R.C.P. LOND.,

PHYSICIAN TO THE CHILDREN'S HOSPITAL, PADDINGTON-GREEN, AND TO THE HOSPITAL FOR EPILEPSY AND PARALYSIS, MAIDA VALE.

NINE years ago a paper by the present writer was published in THE LANCET entitled "On Some Fatal After-effects of Chloroform on Children."[1] The present paper deals with the same subject but its title has been altered in order to emphasise and to support the views maintained in the original communication—namely, that chloroform is apt to produce fatal after-results in children who suffer from a peculiar condition of fatty liver. As so many years have elapsed since the first paper was written it may be pardonable to give a brief *résumé* of its contents.

Nine cases were recorded in which death occurred within from 10 hours to six days of operations performed under chloroform. The exact numbers of hours which passed between the operations and the deaths of the patients were 10, 12, 13, 16, 24, 27, 30, 53, and 150 respectively. In Case 10 recovery took place after symptoms of great gravity had lasted for nearly three days. The diseases which necessitated operation were: infantile paralysis (one case), genu valgum (two cases), strumous knee (one case), congenital hydrocele (one case), vesical calculus (one case), psoas abscess (two cases), and iliac abscess (two cases). The operations were therefore of necessity, though not of emergency, in all cases. They were such as are performed daily by surgeons and are not regarded as attended by any particular danger to life. In all cases the children, apart from the disease which rendered operation expedient, were considered to be in good health.

In eight out of ten of the cases the symptoms were of marked cerebral type, resembling those of maniacal delirium in some, whilst in others they suggested meningitis running an unusually acute and rapid course. Except for the absence of jaundice and hæmorrhages many of the cases might have been diagnosed as "acute yellow atrophy of the liver." After recovery from the immediate effects of the chloroform there was usually an interval of a few hours, at the end of which the child would begin to utter piercing cries at short intervals, disturbing the whole building by its shrieks, grinding its teeth, tossing, struggling, and requiring constant attention lest dressings should be torn off or fractured bones displaced. The pupils were often dilated, sometimes unequally, the face being flushed or pale, with a look of wild terror and anxiety. Consciousness was sometimes lost early and never regained; sometimes there were intervals in which the child would be dull and apathetic but would answer rationally when addressed and usually deny being in pain. Vomiting was a marked feature in all but one case. It was copious, frequent, and persistent, and the vomited matter sooner or later almost exactly resembled the dregs of beef-tea. It answered to Gmelin's test and seemed to consist of bile, gastric juice, and succus entericus. In one case it was described as "bloody" and in another as "coffee-ground." Headache seemed to be absent in all cases. The temperature generally fell to 97° or 98° F. immediately after the operation. A temperature of from 95·8° to 96°, indicating profound collapse, was only noted in one case, and this was the only one in which the patient recovered. The temperature commonly underwent several moderate rises and falls and was above normal at the time of death. In one case it rose to 103° four hours after the operation and remained at that level throughout. In two cases it reached the height of 103·2° and 104·6° just before death. In one it rested between 98° and 99°. In the remaining six cases it varied from 99° to

[1] THE LANCET, Jan. 27th (p. 193) and Feb. 3rd (p. 257), 1894.

102°. Pyrexia, therefore, was not a marked feature. The urine was never suppressed, but in two cases (Cases 1 and 8) it was retained and albumin was present after the operation, and in two others (Cases 6 and 7) albumin was present before operation, but no subsequent mention was made of the urine. In the rest the presence or absence of albumin was not noted. The mode of death was, as a rule, by gradual exhaustion. The screaming at length subsided, perhaps lulled by the morphia and other sedatives given, the vomiting became less frequent, unconsciousness led to coma, and the respiration and the pulse gradually failed, the latter being often imperceptible before breathing ceased. In some the vomiting and the restlessness continued almost till the end and death occurred, with suddenness, from heart failure.

Post-mortem examinations were held in eight out of the ten cases. The organs, with the remarkable exception of the liver (in five cases), gave no conclusive evidence as to the cause of death. In addition to the morbid conditions for which the operations were performed little else was discovered. In one case (vesical calculus) the kidneys were slightly granular, but the child certainly did not die from uræmia. In another (strumous knee) the pelves of both kidneys contained pus, but the kidneys themselves and all other organs appeared to be normal. In a third (iliac abscess) there was slight congestion of the peritoneum but the post-mortem report stated that there was "no apparent cause of death." The heart in four cases showed dilatation of the right side with post-mortem clot and contraction of the left side. In one all the cavities contained post-mortem clot and in another case all the cavities were empty, the right side being relaxed and the left being contracted. The cardiac walls were mostly healthy; in one case they were described as pale and in another there was much fat on the surface; in no case could death be attributed to primary failure of a diseased heart. The lungs were normal in four cases, œdematous and congested in one, congested but otherwise normal in two, and œdematous with some calcareous tubercle in one. The pulmonary condition in no instance accounted for death. The brain in four cases was described as normal, in one there was slight congestion but no evidence of meningitis, and in another there was a good deal of venous congestion on the surface but the brain was otherwise normal. In one case the brain was not examined and in another its condition was not mentioned and was therefore presumably normal. The liver in five out of eight cases was markedly fatty. In three of these the condition was so peculiarly striking that it attracted special attention directly the abdomen was opened. The organ in these cases was of a uniform pale fawn or buff colour, studded internally with pale purple dots which were the intralobular veins. Fatty livers are common enough and everyone is familiar with their purple-brown appearance, streaked and mottled with yellowish streaks and patches, but the pale light fawn colour of the liver in these cases was altogether unusual. During a considerable experience of post-mortem examinations I have never seen the like except in such cases as those now under consideration. The organs broke with brittle fracture, and much oil could be scraped from their surface with a knife. Thin sections stained deeply with osmic acid, the colour being darker in the periphery than towards the centre of the lobules. Under the microscope the peripheral hepatic cells were seen to be distended and globular with fat. Towards the centre the cells were of normal shape but looked granular from the presence of innumerable droplets of oil. The hepatic cells themselves seemed to be otherwise normal. Their nuclei stained deeply with logwood; the connective tissue cells were normal and showed no signs of fatty degeneration. The condition seemed to be one of extreme fatty infiltration rather than of fatty degeneration. Neither macroscopical nor microscopical appearances resembled those of acute yellow atrophy of the liver. But one of these livers, in a child aged four years, weighed only 14½ ounces; another, in a child, aged eight years, weighed 1 pound 3 ounces; and in another child, aged one year and four months, the liver was large, extending one and a half inches below the ribs. In two others it was described as "large, very pale, and extremely fatty on section" in one and as "pale and somewhat greasy" in the other. In the two latter microscopical examinations were not made but their condition was doubtless the same as in the rest. These livers were also very anæmic, the blood expressed from them being pale, watery, and scanty; in some instances it was compared to prune juice. In the remaining three cases in which the liver is described as healthy, or no mention is made of its condition, it is possible that congestion masked the characteristic pallor. These livers were not examined microscopically.

The conclusions drawn as to the cause of death were: (1) that these deaths, in all but Cases 9 and 10, were due to auto-intoxication; (2) that a fatty condition of the liver, and therefore functional disturbance of that organ, existed before the operations; and (3) that chloroform and operation shock combined aggravated the condition already present (fatty liver) and thus loaded the system with toxic alkaloids which the kidneys (notably in Cases 6 and 7, in which pyelitis and slight interstitial nephritis were found) were unable to eliminate. The symptoms in Cases 9 and 10 were unlike those present in the rest and might have been due to mercurial poisoning, although this was by no means clear. The question of iodoform poisoning arose in one case, but could be dismissed on the grounds that the symptoms did not resemble those of poisoning by that drug and that the amount used was small. The only pre-existing pathological condition which seemed to be directly concerned in the causation of death was that which obtained in the liver in at least five out of eight cases. Before arriving at these conclusions, carbolic acid poisoning and fat embolism as possible causes of death were considered at some length and it was held that neither the symptoms nor the post-mortem findings were in keeping with the theory that either of these agents was solely accountable. The part played by shock resulting from the operations could not be altogether ignored in the causation of death, yet in all cases but one the symptoms of shock were not profound. The amount of collapse was not greater than might be expected after lengthy and severe operations. The patient in whom shock was most pronounced was the only one who recovered.

The views and conclusions set forth above did not meet with acceptance. They were considered theoretical and non-proven, and one of the surgeons in charge of some of the children stated that in his opinion death was due to carbolic acid poisoning or to fat embolism rather than to chloroform.

Now, it was admittedly very difficult to disprove that death was due to carbolic poisoning in eight cases. For carbolic acid was used to purify the skin preparatory to the operations in all of these. In the remaining two cases it was only employed in the form of "strong mixture" with which the parts were scrubbed after the patients had been put under chloroform. Carbolic was used as a dressing in six cases (Cases 1, 3, 4, 5, 6, and 7). In two (Cases 2 and 3) vomiting occurred after carbolic cloths had been applied to the skin preparatory to the operation, and in one of these carboluria was present before, though not after, the operation. Carboluria was also noted after operation in Cases 3 and 4. In Case 8 it was present for one day only after operation. In four cases (Cases 1, 5, 9, and 10) it was absent. Hence in eight cases there was the possibility of carbolic poisoning, whilst in four, symptoms of such poisoning were actually present in the shape of vomiting and carboluria. Yet even in these, the symptoms in general were not fully in accord with the view that carbolic acid alone was to blame. Their course and nature seemed to be in no way modified by the presence or absence of hydroquinone in the urine. Carboluria was absent in Cases 1 and 5, yet the symptoms were the same as in Cases 2, 3, and 4, in which carboluria occurred. Moreover, in all these five cases the peculiar fatty condition of the liver was discovered after death. Ten years ago, when carbolic acid was used with far greater freedom than it is now, carboluria was almost invariable after an operation, but in the great majority of cases it was unattended by other symptoms and in itself was regarded as of little consequence. It is true that sometimes carboluria was accompanied by vomiting, a high temperature, or signs of collapse, but the symptoms were in ordinary cases speedily relieved by changing the dressings. The dressings were changed in Cases 1 and 3 of this series, but without the slightest benefit to the patients. It is difficult to believe that death was due in any of these cases to the effects of carbolic acid alone. At the same time, it is highly probable that persons subject to the condition of fatty liver described may also be specially susceptible to the effects of carbolic acid. The following case seems to illustrate this point and although the patient was an adult it may be interpolated here. I am indebted to Mr. J. Hogarth Pringle of Glasgow for permission to relate it.

CASE 11.—A woman, aged 41 years, was admitted to the Glasgow Royal Infirmary on Oct. 29th, 1897, for treatment of

disease of the left knee-joint. Her previous health had been good except for the condition of the knee, which had given her trouble, off and on, for 27 years. For four years, however, she had had occasional attacks of gall-stone colic. On admission all the organs appeared natural and the urine was free from casts and albumin. The disease of the knee was tuberculous. The limb was put up in wet carbolic cloths (1 in 50) preparatory to operation. After 24 hours the patient began to vomit bile-stained fluid and the urine was greenish, becoming darker on standing. The wet dressings were at once discontinued, but the vomiting persisted for eight days and she was seriously ill, requiring rectal feeding. Champagne only could be retained in the stomach. After subsidence of the vomiting she remained well for nearly three weeks. The urine was still free from albumin and casts. On Nov. 24th the knee was excised under chloroform. No carbolic acid was used. During that night vomiting recommenced and increased in severity. Nothing had any effect in checking it. In the afternoon of the 26th she became drowsy and at night she could not be roused to answer questions. The urine was passed in small quantities and now contained casts. She died comatose on the morning of the 27th, three days after the operation. At the post-mortem examination the operation wound was aseptic. The lungs were healthy. The heart was small but the muscle was healthy. *The liver was markedly fatty.* Both kidneys were fatty, with some interstitial nephritis. Neither the pelves nor the ureters were dilated. The spleen was normal.

There can be no doubt that had the operation been performed within the 24 hours after which the carboluria and vomiting occurred, death would not unnaturally have been attributed to carbolic acid poisoning, whereas after-events proved the contrary. It will be noted that in this case also the liver was markedly fatty and that there was no apparent cause of death from disease of other organs. The condition of the kidneys was, no doubt, due to the action of chloroform, which is now known to be capable of producing pronounced renal changes.

Returning now to fat embolism as the alleged cause of death in some of the children, it will be observed that the symptoms in no single case suggested such lesions of the lungs or brain. Had the pulmonary capillaries been so extensively blocked by fat as to cause death, cyanosis, urgent dyspnœa, orthopnœa, asthmatic attacks, with signs of acute pulmonary œdema, could not have failed to appear. But all these signs were absent. Death in all cases was in consequence of gradual or sudden cardiac and respiratory failure. Again, presuming that the cause of death was fat embolism of the cerebral circulation, convulsions, local paralyses, or hemiplegia might surely be expected. But none of these conditions occurred. Had the embolism been of the kidney, suppression of urine, or at least the presence of fat in the urine, would have been discovered. But all these symptoms of fat embolism were absent. With regard to post-mortem evidence, in cases of death due to pulmonary fat embolism one might have expected to find extensive congestion, œdema, and multiple hæmorrhages and infarcts in the lungs. Had the cerebral circulation been blocked, a similar condition, in addition to extensive softening, should have been found in the brain. But post-mortem examination revealed none of these conditions to the naked eye, at all events so obviously as to render the cause of death beyond question. On the other hand, two of the operations (osteotomies) might conceivably have caused fat embolism. Yet the symptoms in these did not differ from those of a patient in whom a few tendons about the ankles were divided, or from those of a case of radical cure of hydrocele and in neither of the latter could the idea of fat embolism be entertained. In all of these a fatty liver was discovered and it seemed more reasonable to connect the liver with the cause of death than a conjectural fat embolism.

Grave doubts may be expressed whether fat embolism is so potent a cause of death as has been supposed. According to Scriba[2] the quantity of fat which must be introduced into the circulation of an animal in order to cause death must be three times as great as that contained in the marrow of the animal's femur. In man he estimates the maximum fatal quantity as 210 grammes, or about seven ounces. On this calculation it is remotely possible that all the fat contained in the femur, the tibia, and the fibula in one case escaped into the circulation and so caused death, and that in another the medulla in both femora was sufficient to produce a fatal result. This is possible though not probable. But it is far less probable that scraping of an iliac abscess should cause several ounces of fat to enter the circulation, especially when one considers that the abscess was evacuated at the time of the operation. Finally, it is true that microscopical examination might have shown fat in the pulmonary or cerebral blood-vessels, at all events in some cases. But even if demonstrated it would, in my opinion, have been inconclusive evidence of fat embolism without gross pathological changes indicating the results of capillary obstruction. Mr. W. Watson Cheyne, however, whose opinion and authority command the highest respect, considered the omission of microscopical examination of the lungs and the brain as of great importance.

The writer of a leading article on the subject in THE LANCET[3] seemed to adopt the view that carbolic acid or fat embolism was responsible for these deaths and not chloroform, whilst I found that this view was generally accepted by most of the friends with whom I discussed the question, hence I could only look for fresh material and evidence in support of my own contentions with misgivings lest meanwhile my colleagues might be reposing in a false sense of security.

In order to meet criticism the following requirements were needed: (1) that the patient should be an apparently healthy child; (2) that the operation should be a trivial one; (3) that carbolic acid should not have been used either before or during the operation except in the form of "strong mixture"; (4) that the symptoms should be such as I had described; (5) that the characteristic fatty liver should be found after death; and (6) that microscopical examination should be made of the lungs and brain in order to settle the disputed question that fat embolism was the cause of death in such cases. The following case, which my friend and colleague, Mr. F. F. Burghard, kindly allows me to quote, seems to answer most of these requirements. For the notes of the case, which I extract below, I am indebted to Mr. J. A. Drake, house surgeon to the Children's Hospital, Paddington-green.

CASE 12.—A boy, aged three years, was admitted into the hospital under the care of Mr. Burghard for treatment of webbed fingers and toes on April 6th, 1903. The patient was a healthy-looking, well-nourished boy. He was described as having been "dyspeptic" since birth, subject to "bilious attacks" and "night terrors," and "very passionate." He had once had jaundice but no other complaints except urticaria. The day before admission into the hospital he had fallen in the road and grazed his forehead. He was not stunned and was able to walk home, where he arrived crying and "all of a tremble" with blood on his clothes. He was not sick and on the next day he seemed to be as usual except that he would not eat much breakfast and complained of feeling tired when walking. The graze on the forehead was superficial and nothing seemed amiss with the boy on admission. On the 7th, at 3 P.M., Mr. Burghard divided the slight webs between the second and third fingers of both hands. Chloroform was administered by Dr. H. P. Noble and was taken well. The skin was purified on the operating table with turpentine, followed by soap and strong lotion (perchloride of mercury, 1 in 500, and carbolic acid, 1 in 20, in equal parts), washed off with perchloride of mercury (1 in 2000). The wounds were dressed with cyanide gauze soaked in perchloride of mercury (1 in 4000). The operation lasted about 20 minutes. In the evening the child vomited twice slightly but had apparently recovered from the effects of the chloroform. On the next day (the 8th) he seemed quite well but was rather passionate, as he had been before the operation. On the morning of the 9th he was again slightly sick and was noticed to be drowsy and apathetic. In the afternoon of the same day he became distinctly though not deeply jaundiced. In the evening, at about 9 P.M., he suddenly began to scream loudly, the screaming occurring in fits or paroxysms and the boy seeming semi-conscious. He was unable to answer any questions or to locate any painful spot. There was no tenderness over the ears or head or about the abdomen, except possibly in the region of the liver which was distinctly enlarged. Urine was passed involuntarily in the bed. The screams, which were of shrill meningitic type, continued until after 3 A.M., when they ceased after chloral

[2] De Groubé: De l'Embolie Graisseuse; Revue de Chirurgie, Paris, 1895.

[3] THE LANCET, Feb. 17th, 1894, p. 419.

and bromide (six grains of each) had been given in two doses and also half a drachm of bromidia. On the 10th he cried out occasionally but the shrill screaming did not recur. He lay in a practically unconscious condition. The pupils were equal and reacted very slightly to light; they were moderately dilated, the conjunctival reflex being very much diminished. The knee-jerks were present but difficult to elicit; the plantar reflexes were sluggish and extensor in type. The respirations were 16 per minute and somewhat deep and irregular, the pulse being 116 and regular and of fair volume. He was constantly sick during the morning, the vomit being brown in colour and resembling "beef-tea," though he had taken none. The jaundice was about the same as on the previous day and the liver could be felt two fingers' breadth below the ribs. The fæces, after calomel and an enema had been given, were of normal colour. Urine was passed unconsciously; it was alkaline and contained no albumin or sugar or bile. Stellar phosphatic crystals were present and some doubtful tyrosin needles, but no leucin could be found. The urine contained no free fat. Towards night the unconsciousness increased to coma. The conjunctival reflexes vanished and there was slight lateral nystagmus, especially in the left eye, with a tendency in both eyes to turn upwards. The respirations were loud and rather quick at times, then becoming noiseless, but not of typical Cheyne Stokes character. The pulse was 120 and still regular. The knee-jerks were absent. The boy moaned occasionally and being unable to swallow was fed by the nasal tube. At 2.45 A.M. on the 11th he died somewhat suddenly, 84 hours after the operation. The temperature throughout remained between 97° and normal.

The post-mortem examination was made 12 hours after death. The body was well nourished but deeply jaundiced. The operation wounds were quite healthy. As regards the heart, the valves and walls looked normal. The right auricle and ventricle were moderately distended by dark post-mortem clots. The lungs were full of air and somewhat congested in parts. Here and there dark petechiæ were found on the pleural surfaces and also in the interior. They varied in size from that of a pin's head to that of a pea. Otherwise the lungs appeared to be normal in all respects. The bronchial glands were not diseased. The liver weighed 1 pound 12 ounces. It was of a pale fawn colour exactly resembling the colour of the liver as described in other similar cases. It was smooth and of soft consistency. The cut surface was of the same fawn colour and showed innumerable dark purple specks (the intralobular veins). The blood expressed was thin and watery and resembled prune juice. The gall-bladder was not distended and contained about one and a half drachms of dark green fluid bile. The main ducts were not obstructed and the duodenum seemed healthy. The kidneys, the suprarenal capsules, the spleen, and the intestines showed no abnormalities. The mesenteric glands were pale, soft, and a little enlarged, but not tuberculous. The convolutions of the brain were pale and slightly flatter than normal. The meninges seemed perfectly healthy. The ventricles contained a normal amount of fluid. The entire brain was firm in substance and showed no sign of softening anywhere. On section it was of normal appearance. The liver and portions of the brain and lungs were reserved for further examination, and I am indebted to Mr. J. W. Thomson Walker, pathologist to the hospital, for the following report on their condition.

The liver was preserved in formalin. The anterior edge was thick and rounded, and the whole organ was probably increased in size. The capsule was smooth and glistening, and the underlying tissue was pale. On section the surface showed a very striking pinkish fawn colour, no bile staining or hæmorrhage being present. The lobules were normal in size and were well defined by a ring of yellow which occupied two-thirds of each lobule, and their central zone was marked by a brownish red point. There was no increase of the fibrous tissue of the liver capsule or of the portal canals. The veins were normal to the naked eye. Portions of the liver were prepared and stained with osmic acid, saffranin, and hæmalum and eosine. In the osmic acid preparations chloroform was used as a clearing agent, and for the removal of the paraffin in which the tissue was imbedded. In the other portions no attempt was made to preserve the fatty contents of the cells, which were consequently dissolved out, and they served as excellent contrast sections with those stained with osmic acid.

Microscopical examination.—With a low power (× 60) the osmic acid preparations showed a ring of fatty cells occupying the outer zone of each lobule. Inside this the intermediate zone showed a few minute points of black in the liver cells, while in the central zone none were visible. In the sections stained with saffranin and eosine and hæmalum the liver cells of the central zone were filled with fine granules which gave them a dull opaque appearance. A nucleus was dimly visible in a few but in most was completely obscured. Passing outwards towards the periphery of the lobule the nuclei of the liver cells became more evident and in the outer zone where the fat had been dissolved out of the sections the nuclei were well stained and centrally placed. The central vein of the lobule was normal and there was no increase in the fibrous tissue of the portal canals. The vein, artery, and bile-ducts of the portal canals were normal. Surrounding the bile-ducts of each system there was an increased number of nuclei which in some was very well marked. There seemed to be some increase in the number of the small bile-ducts at the periphery of the portal systems and here and there between the lobules. Under a high power (× 450) the liver cells of the central zone had a very fine granular appearance which in most of the cells completely obscured the nucleus. Minute brownish and black globules were also apparent in the protoplasm of these cells in the sections stained with osmic acid. In the outer part of the lobule the liver cells contained droplets of fat of varying size. In some cells there were but few droplets, while in others the whole cell was filled with them. In none of the cells had the fat formed a single large globule. In the outer zone of the preparations in which the fat had been dissolved out and hæmalum and eosine or safranin used as a stain the liver cells were well defined. The nucleus was centrally placed, well stained, and of a natural contour, and the protoplasm was reduced to a network the varying-sized meshes of which had contained the fat globules. The nuclei of the capillaries between the cell columns of the lobule were well stained and prominent. The slight increase in the number of fine bile capillaries at the periphery of the lobules was confirmed under this power and the increase in the nuclei around the bile-duct of the portal systems was found to be due to an infiltration of small round cells. The condition present in this liver is that of cloudy swelling and fatty degeneration. (See illustration.)

Liver from Case 12, showing distribution of fat globules in peripheral zone of lobules. × 50.

Lung.—The portion of the lung examined showed a number of small hæmorrhages to the naked eye. Under the microscope the hæmorrhages were grouped around the smallest bronchioles. The air vesicles in the affected areas contained proliferated and desquamated epithelium and numerous blood corpuscles, the latter giving the impression of simple hæmorrhages macroscopically. The capillary blood-vessels in these areas were distended with blood but nowhere showed any sign of fat embolus nor was there any fatty change recognisable in their walls. There were proliferation of the epithelium of the small bronchioles and well-marked congestion of the vessels and infiltration of the connective tissue around the larger bronchioles. The condition was one of capillary bronchitis. [It should be noted that the condition of the lung above described only affected small scattered areas. The lungs as a whole were healthy.—*Note by L. G.*]

Brain.—No pathological changes were found in the nerve cells, nerve fibres, or neuroglia of the portion of brain examined and the blood-vessels were normal.

This case seems to meet all the requirements laid down. The child was apparently healthy, the operation was trivial, and the possibility of carbolic acid poisoning could be excluded. After recovery from the immediate effect of chloroform there was the usual delay in the onset of symptoms. For more than 36 hours nothing occurred to excite alarm. Then after a period of drowsiness and apathy there was the occurrence of wild and piercing shrieks continued for the greater part of the night followed by the stage of unconsciousness, vomiting of the characteristic beef-tea-like matter, and ending in coma and death. Jaundice was a peculiar feature of this case. It occurred in none of the others and is a symptom of great interest and importance to which further reference will be made. The pale and fatty liver precisely resembled that which had been described in other cases. The microscopical appearances in this and in the earlier cases were practically the same, except that in the latter cloudy swelling of the hepatic cells was not apparent. Finally, fat embolism was not present in either brain or lungs.

The next case, although incomplete so far as the post-mortem examination is concerned and therefore hitherto unpublished, is obviously one of the series.

CASE 13.—A well-nourished and healthy-looking little child, aged one year and ten months, was admitted to the Children's Hospital, Paddington-green, under the care of Mr. Burghard on Feb. 24th, 1898, for treatment of nævus on the left shoulder. Part of the nævus had been removed by Mr. Burghard in June of the preceding year but it had since grown again, though not very rapidly, in the neighbourhood of the operation scar, and now extended in front to the middle of the clavicle and backward as far as the acromion. The child's general health had always been good. On admission the temperature was 100·8° F. but she was very bright and amused herself by running about in the ward during the morning. She slept between 1.45 and 3.45 P.M., then awoke and was very sick, bringing up large quantities of currants and other undigested food. The temperature was normal in the evening and she slept well during the night. She was again slightly sick after breakfast but seemed otherwise well. At 10 A.M. on the 25th Mr. Burghard excised the remaining portions of the nævus, the child being under chloroform. The operation lasted 20 minutes. There was very little hæmorrhage. The wound was dressed with cyanide gauze. Carbolic acid was only used in the form of "strong mixture" to purify the skin at the commencement of the operation. The child recovered normally from the immediate effects of the chloroform and showed no signs of shock. At 4.30 P.M. she was slightly sick after taking milk and barley-water, but the sickness did not recur during the evening. The temperature at 9 P.M. was 102°. She slept well through the night. At 5 A.M. on the 26th she awoke, was restless and appeared to feel sick but did not vomit. She slept again till 7.15 A.M. and then became very restless, somewhat cyanosed, and brought up a little dark coloured fluid. She was then quite conscious. The pulse became feeble and rose from 136 to 160. The respirations were sighing in character. She was very thirsty. Brandy and strychnine were given. The wound was dressed at 9 30 A.M. and looked healthy. There was no hæmorrhage. At 11 A.M. she vomited more dark-coloured matter. At noon she became unconscious though still very restless and thirsty. At 2 P.M. there were slight general convulsions. A saline injection was given as a last resource, but the child died half an hour later, 28 hours after the operation. The pulse at the last was 160 and the temperature at the time of death was 106°.

At the post-mortem examination the operation wound was found to be healthy in all respects. There was no clotting in the veins. The lungs were slightly œdematous. All the other organs seemed healthy with the exception of the liver which was of a pale fawn colour and softer in consistence than normal. The blood in it was fluid, thin, and of a pale prune colour. The liver weighed 13 ounces. Microscopical examination of the organ showed a slight increase of fibrous tissue along the portal canals in places, but the hepatic tissues appeared healthy. Unfortunately, it was preserved in alcohol which prevented demonstration of fat present by the osmic acid process. But Dr. R. Tanner Hewlett, who was kind enough to examine sections, reported that they were "undoubtedly markedly fatty in places." As in other cases, the accumulation of fat was in the periphery rather than in the centre of the lobules.

The symptoms in this case were not of the pronounced cerebral type noticed in most of the others. Screaming and delirium did not occur, but extreme restlessness and vomiting of beef-tea-like matter were present as in others, soon followed by unconsciousness.

I have to thank Dr. H. Lambert Lack for notes of the last case to which I shall refer. In the absence of a post-mortem examination it is even more difficult to explain than the rest, but nevertheless it seems worth recording.

CASE 14.—A girl, aged about three years, was admitted to the Throat Hospital, Golden-square, for treatment of a small post-pharyngeal abscess. Dr. Lack opened the abscess from behind the sterno-mastoid without difficulty. Chloroform was administered by Dr. James Atkinson and was taken well. The operation lasted from 10 to 15 minutes. On the next morning (24 hours later) the child seemed fairly well but was often sick, and the temperature was 102° F. At 8 P.M. the same night, 33 hours after the operation, the child had a "cold fit," in which there was slight shivering and the extremities became blue. The temperature rose to 107° and death occurred half an hour later. Carbolic acid had been used at the operation and in the dressings, but there was no carboluria. Unfortunately, the friends would not allow a post-mortem examination.

The symptoms in this case resembled those of the last-mentioned case in the hyperpyrexia and slight convulsions which occurred. Hyperpyrexia was only noted in these and it is therefore probable that hyperpyrexia occasioned the convulsions. In this case, again, cerebral symptoms in the shape of screaming were absent. Indeed, the stage of excitement, although so prominent in the majority of cases, was not invariably present in all.

It will, I think, be admitted that this new series of four cases, including that of the woman in Case 11, throws light on the original ten recorded in the earlier paper.

The additional cases seem to prove the following: 1. That neither carbolic acid poisoning nor fat embolism will account for these mysterious fatalities. 2. That the severity of the operations has little if anything to do with the cause of death. 3. That the only pathological condition commonly found after death is a peculiarly intense fatty degeneration or fatty infiltration of the liver. This condition was found in five of the first series and in three of the second series of cases. It was not noted in three of the first series, but in these a microscopical examination was not made. Of the remaining three one recovered and in two permission for a post-mortem examination was refused. 4. The only other circumstance common to all the cases was that chloroform had been administered some hours or days before death. We are therefore driven to seek an explanation in the morbid state of the liver which was demonstrated in eight out of 14 cases and can therefore not be regarded as a pure coincidence and also to inquire again what part (if any) was taken by chloroform in producing it.

It is necessary, in the first place, to be more explicit as to the precise nature of the fatty changes found in the liver. Is the condition one of fatty degeneration or merely of fatty infiltration? In the earlier paper I decided in favour of fatty infiltration on the ground that the accumulation of fat was far more marked in the periphery than in the central parts of the lobules and also because the hepatic cells seemed healthy and their nuclei were well defined and stained. Moreover, although the cells towards the central portion of the lobules looked granular from the presence of innumerable droplets of oil, towards the periphery the cells were distended by fat globules of much larger size. The question of degeneration *versus* fatty infiltration is indeed difficult to decide. Mr. Thomson Walker has kindly sent me the following comment on the subject in the light of the case examined by him (Case 12).

It is admitted by the best authorities that the differentiation by the microscope between fatty degeneration and fatty infiltration of the liver cells is by no means always possible. The presence of numerous small globules of fat in the liver cells affords the basis for the classical description of fatty degeneration in contra-distinction to the single large fat globule of fat infiltration. The two conditions are frequently described as occurring together, and, further, when occurring apart, their characteristic appearances may be transposed. It therefore may be said that while the well-known characteristics suffice to distinguish the two conditions in the majority of instances yet there are cases in which too much confidence must not be reposed in the grouping of the fat globules within the liver cells. Other factors must, therefore, have their influence in differentiating between these two conditions. The distribution of the fatty change is not unimportant. Fatty degeneration, resulting as it does from some general toxic process, is usually pretty evenly distributed throughout the entire lobule; fatty infiltration, on the other hand, is often confined to the outer zone. This, however, is only a matter of degree; the cells of the whole lobule from periphery to central vein may be occupied by fat globules absorbed from without, while, on the other hand, the outer part of the lobule may be in a condition of fatty degeneration while the more central part shows an earlier stage of the same process in cloudy swelling of the cells. The presence of a centrally-placed, healthy-looking nucleus is an apparent contradiction to the term "degeneration," but in the earlier stages of fatty degeneration it obtains. The division and breaking down of the nucleus and of the whole cell structure are phenomena of the later stages and of the more severe forms of fatty degeneration and need not be looked for as a point on which to base a microscopic diagnosis. In the case under consideration the number of globules in each cell points to a degeneration, while the limitation to the outer zone is rather against this. At the same time, as has been noted, the more central area of the lobule is in a condition of cloudy swelling and the combination and sequence of cloudy swelling and fatty degeneration are well recognised. The slight increase of, or apparent increase of, bile-ducts and the round-cell infiltration around the bile-ducts are not a marked feature of the condition and may be disregarded.

On the whole, therefore, bearing in mind the limitations of microscopic diagnosis above pointed out, I believe the condition present in this case (Case 12) is one of fatty degeneration and this conviction is somewhat strengthened by the clinical history of the case.

The microscopic appearances in the case examined by Dr. Walker do not differ essentially from those found by myself in other cases except for the presence of cloudy swelling and of slight increase of bile-ducts in the former, and it will be

remembered that this was the only one in which jaundice occurred, which fully accounts for the difference. I am, therefore, now inclined to agree with Mr. Walker that the condition in all cases was one of fatty degeneration rather than of fatty infiltration. He agrees with me that my preparations of the liver in earlier cases show changes of a similar type to those which he describes and that none of them is an example of acute yellow atrophy.

We must now consider the cause of fatty degeneration of the liver in these cases. Was it directly produced by the action of chloroform or was it pre-existent at the time of operation under chloroform?

As mentioned in my earlier paper, the pathological effects of long-continued administration of chloroform have been investigated by Ungar and Strassmann, Thiem and Fischer,[4] and also by Ostertag of Berlin.[5] The results of chloroforming several animals for an hour or so during a period of many days were thus summed up by Ostertag:—1. Fatty degeneration of organs, especially fatty infiltration of the liver, and fatty metamorphosis of the cardiac and skeletal muscles, kidneys, and stomach. 2. These fatty changes were considered to be due to the action of chloroform upon the blood (destruction of red corpuscles) and upon the tissue cells. 3. Some individuals were found to show a greater susceptibility to chloroform than others and to succumb at an earlier period to its effects. 4. The fatal effect was due to cardiac failure or paralysis, occasionally accompanied by slight anatomical lesions of the myocardium, and also to gradual carbonisation of the blood. Ungar and Strassmann described similar fatty changes, without, however, appreciable alteration in the blood. These researches appear to prove that the results of long-continued administration of chloroform are to produce fatty changes in the body generally and in the liver in particular. More recently these experiments on animals have been repeated and the results confirmed by Heintz,[6] by Bandler,[7] and by Ferdinand Schenk[8] who examined the livers of animals at the beginning of chloroform narcosis and some days or weeks subsequently and found that the fat which appeared in the organs a few hours after inhalation sometimes did not disappear for days or even weeks. Ether gave rise to similar changes but to a less extent.

Analogous results of chloroform upon human beings.—Casper[9] said: "It can no longer be doubted that there is such a thing as chronic poisoning by chloroform—that is, that the drug when it does kill does not always kill instantaneously, but that hours, days, or even weeks may elapse during which the person anæsthetised remains continuously under the influence of the poison, to which at length he succumbs." He quoted cases from Berend[10] in which death followed the use of the anæsthetic during the ensuing night or within 15 or 48 hours, and mentions one of his own in which a woman never completely recovered her senses lost during the inhalation and died 11 days subsequently. The significance of some of these cases is perhaps doubtful, but one related by Berend is worth mentioning. This was that of a drunken painter whose left shoulder was excised by Langenbeck. The operation lasted three-quarters of an hour. Complete consciousness, motion, and sensation returned. In the evening vomiting suddenly occurred and recurred during the night after swallowing fluids. At 8 A.M. on the next day the pulse suddenly ceased and the movements of the heart could scarcely be felt, but the respiration was free and regular although the patient complained of oppression. An attempted venesection gave vent to a little watery ink-coloured blood. He died 17 hours after the operation. The chief post-mortem appearances were black watery blood with air-bubbles in the cardiac veins, in the branches of the pulmonary artery, and even in the larger veins of the extremities. The lungs were distended and anæmic. The heart was not distended, but both sides contained fluid blood with dark feebly coagulating clots. *The liver was fatty* and the kidneys were pale and firm. The brain was peculiarly pale and here and there quite anæmic. Casper regarded a dark fluid condition of the blood as always present in the bodies of those who had died from chloroform, but he admitted that it was not confined to those who had so perished. In some of my cases a somewhat similar condition of the blood was noted, but it was not invariable.

The following are more recent instances of fatalities attributed to prolonged administration of chloroform. Schenk[11] records the cases of two women who died on the third day after difficult gynæcological operations with symptoms of heart failure and severe affection of the kidneys. Post-mortem examination showed fatty degeneration of the heart, the liver, and the kidneys. Death was attributed to the long period (from one and a half to two and a half hours) during which the patients were under chloroform. He deprecated the practice of repeating inhalations of chloroform at short intervals. In his valuable paper Schenk enumerates many instances of similar fatalities after operations under chloroform recorded by other observers. Thus Fränkel and Bastanielli each reported three cases; Roth, Eisendraht, Ambrosius, Marthen, Thiem and Fischer, and Bandler, one each; whilst Heintz contributed no fewer than eight to the series. In all of these, symptoms occurred more or less resembling those which I had already described in children and in all of them fatty changes were found either in the liver, heart, or kidneys, or in all these organs. In some instances the changes in the liver were described as those of acute yellow atrophy, in others as of fatty degeneration or fatty infiltration. More recently still, Cohn[12] has published the case of a woman, aged 21 years, whose uterine appendages were removed under chloroform. The inhalation lasted one hour and 175 grammes of chloroform were expended. After two days jaundice and albuminuria with numerous casts appeared. There was neither fever nor increase of pulse rate. Death took place on the fifth day. The necropsy showed extensive necrosis of the uriniferous tubules and degenerative changes in the liver cells which Cohn attributed to the prolonged action of chloroform. Finally, just as the present paper was on the point of completion, Ballin[13] reported a case in which an operation for acute appendicitis on a man, aged 20 years, was followed on the fourth night by typical symptoms of acute yellow atrophy of the liver. The patient recovered eventually after treatment by venesection and intravenous saline transfusion. Ballin has collected nine other cases of post-operative acute yellow atrophy, mostly from the above-named authors mentioned in Schenk's paper. All ten cases have in common that one or two days after an operation a slight icterus developed which was followed by vomiting, violent delirium, coma, and death in all but one. In seven cases chloroform was used and in one Billroth's mixture; in the remaining two records the anæsthetic is not mentioned. Except in one case all the operations were upon the abdomen. In all cases the operations were severe and lengthy, requiring a large amount of the anæsthetic. All the patients above mentioned were adults. Abundant evidence is therefore at hand, since the appearance of my earlier paper in 1894, that the danger to which attention was then drawn of chloroform narcosis in children was by no means over-rated. The symptoms and pathological findings in children which were then described are, on the whole, similar to those which have been subsequently observed in adults. There is, however, an important difference between the views of other observers and my own as to the exact part played by chloroform in causing these untimely deaths. All authorities seem united in ascribing the pathological changes met with after death to the action of chloroform alone; whereas I formerly held, and still believe, that chloroform only takes the rôle of "the last straw" in the matter, for the following reasons.

Although experiments on animals show that general fatty degeneration is the result of prolonged narcosis by chloroform repeated for many days, it is extremely difficult to believe that changes so profound as to cause death can be produced by inhalation of chloroform lasting only an hour or so. Schenk's experiments only prove that fatty livers can be produced by chloroform, not that the production of such fatty livers is fatal in healthy subjects. Were it otherwise, such fatalities as have been described would be of everyday occurrence. Moreover, although in all of my first series of cases in which a fatty liver was found the period of inhalation lasted certainly not less than an hour, this was not so in the second series. For instance, in

[4] Deutsche Medicinische Zeitung, 1889, p. 1111.
[5] Pathologisches Institut, Virchow's Archiv, vol. cxviii., p. 2.
[6] Rotterdam, Inaug. Diss., 1896.
[7] Mittheilungen aus dem Grenzgebiet der Medicin und Chirurgie, 1896.
[8] Zur Tödtlichen Nachwirkung des Chloroforms, Zeitschrift für Heilkunde, 1898, p. 93.
[9] Forensic Medicine, vol. ii., p. 293, New Sydenham Society, 1862.
[10] Cases of Death from Chloroform, Hanover, 1850.
[11] Op. cit.
[12] Deutsche Zeitschrift für Chirurgie, June, 1902.
[13] Annals of Surgery, March, 1903.

Case 12 the duration of the operation (division of webbed fingers) was only from 15 to 20 minutes, yet this case is perhaps the most typical of the whole series both in the nature of the symptoms and in the condition of the liver discovered after death. In Case 13, again, the period of inhalation was only 20 minutes and here, also, the fatty liver was found. Again, the amount of chloroform used in these cases probably did not exceed one or two drachms, all of which would not have been inhaled. In one case lasting fifteen minutes half a drachm was the amount of chloroform evaporated in a Junker's inhaler. It is almost incredible that such small amounts of chloroform, inhaled for so short periods as those mentioned, should be capable of producing extreme fatty metamorphosis in healthy organs. Therefore, one can only conclude that this fatty metamorphosis pre-existed the operation and that chloroform in some manner aggravated the fatty condition already present and made it fatal.

In the original paper two theories were suggested in explanation of the *modus operandi* of chloroform in these cases.

Fat embolism theory.—Presuming the liver to be previously fatty owing to diminished oxidising powers in the blood arising from an unknown cause, it was possible that chloroform, by still further decreasing oxidation, might increase the fatty metamorphosis already present. In such circumstances more fat might be poured into the circulation than could be oxidised. The result might be fatty embolism of both lungs and brain. This theory was, however, discarded because, as already mentioned, the symptoms in no case suggested fat embolism of either lungs or brain, whilst the post-mortem examination in Case 12 conclusively negatives the existence of fat embolism as the cause of death in one and, therefore, I think, in all the other cases.

Toxæmic theory.—Although the liver in no case answered to the classical description of acute yellow atrophy, yet the nervous or cerebral character of the symptoms, the peculiar vomiting of beef-tea-like matter, so prominent in most though not in all of the cases, strongly resembled the type met in acute yellow atrophy or after poisoning by phosphorus and other drugs having a similar action. It is true that jaundice and hæmorrhages were absent except in Case 12. But here jaundice was well marked and hæmorrhages were found in the lungs after death. So the case may be regarded as the coping stone of the rest, for it leaves no room for doubt that the liver is really at fault in these events and that its fatty condition is truly pathological and not merely a physiological and innocuous coincidence.

The cause of the cerebral symptoms in acute yellow atrophy of the liver has long been a matter of dispute, Frerichs thought they depended on the presence of leucin and tyrosin in the blood, Virchow regarded them as simply uræmic and Rokitanski thought that they were of nervous origin, but not any of these views are tenable. Sir Lauder Brunton[14] has insisted on the analogy between the symptoms of acute yellow atrophy and those of poisoning by phosphorus, lupinotoxin, and toluylendiamine, and has argued with much force that in acute yellow atrophy death is due to poisons which have a similar action to those mentioned, but are formed within the bodies of the patients themselves by microbes, the nature of which is unknown.[15] Sir Lauder Brunton,[16] has, moreover, brought forward abundant evidence that an important function of the liver is to deal with poisons entering the portal circulation from the intestinal tract and to prevent them from passing into the general circulation. If they did so they would speedily prove fatal unless eliminated by the kidneys. But normally they are either destroyed in the liver or re-excreted in the bile, or should they enter the general circulation they escape by the kidneys. In order to prove fatal such poisons, whether introduced from without or generated within the body, must either be in such excess as to destroy the hepatic structure and functions—e.g., as in acute atrophy or phosphorus poisoning—or else the liver and kidneys must be functionally inadequate to deal with them, though only present in such quantities as are normally easily disposed of by healthy organs.

Applying such information to the cases under consideration it seems probable that: 1. The liver being previously to the operations in an advanced state of fattiness was probably on the verge of functional inadequacy with regard to elimination of toxins entering the portal circulation, though still able to hold its own in ordinary circumstances. 2. Chloroform by decreasing oxidation already deficient aggravated the condition of fattiness already present and so lowered the hepatic functions that ptomaines or toxins escaped into the general circulation. 3. Chloroform, moreover, by its specific action on the kidneys, prevented the elimination of such poisons by the urine and was thus again immediately concerned in the cause of death. These were the conclusions arrived at in the earlier paper and I am at a loss to suggest any other explanation of the facts. The writer of the leading article in THE LANCET to which reference has already been made threw doubt on the contention that chloroform is the direct cause of death in the subjects of the form of fatty liver described on the ground that the most marked cases of lardaceous and fatty disease are daily operated upon under chloroform without the occurrence of such symptoms as I had observed. He also mentioned that animals which were poisoned by the use of phosphorus and then chloroformed in the Hyderabad experiments did not show any unusual reaction towards the anæsthetic. I must again insist that in children the form of fatty liver to which attention has been drawn is altogether peculiar to these cases of fatality following operations under chloroform. I am familiar with most kinds of fatty liver but have never seen the pale fawn- or buff-coloured variety except in such cases as these. The distinction is that the fatty change affects the entire organ uniformly and is not confined to portions of it. And this may account for the sequence of events. The nearest approach to its appearance is in acute yellow atrophy, but, as already mentioned, the liver in these cases is not atrophied. With regard to the Hyderabad experiments on animals it is possible, as THE LANCET stated, that parallel symptoms might have arisen had the animals been kept alive longer. But the conditions would not, I think, be the same and it would be difficult to decide how far chloroform and how far phosphorus were responsible for events which might then have occurred.

Prophylaxis and treatment.—There is nothing new in the suggestion that operations may be dangerous to the subjects of fatty liver. Verneuil[17] and Symonds of Oxford[18] described cases of unexpected death after operations and noted the existence of fatty livers post mortem. They advised against operations in such cases but they did not attribute the fatal results to chloroform. Their warnings, as well as my own, have hitherto been disregarded, doubtless because they were thought to refer to ordinary cases of fatty liver. But it is probable that Verneuil and Symonds had in mind the peculiarly intense form of fatty liver which I have described. The practical value of the caution would be greater were it easier to recognise with certainty the existence of these markedly fatty livers during life. One may suspect the condition but cannot prove it, for *per se* it seems never fatal. The train of fatal symptoms is not met except in those who die after operations under chloroform or in definite instances of acute yellow atrophy, which these are not. There are no infallible physical signs to guide us. But it is possible that the history of symptoms in the patient might give rise to suspicion of the existence of a morbidly fatty liver. A history of repeated so-called "bilious attacks," which on inquiry or observation are usually diagnosed as "acute gastric catarrh," is suggestive of the presence of fatty liver. Such attacks are characterised by violent and incessant vomiting, fever, delirium and night terrors, diarrhœa or constipation, epigastric pain and tenderness, and sometimes slight jaundice. The tongue is thickly coated; there may be aphthous ulcers on its surface and a copious flow of clear glairy mucus in the mouth. There is also the sweet and characteristic odour of acetone in the breath. These symptoms suggest some acute form of ptomaine poisoning and may be indications of a fatty and incompetent liver. They seldom last more than a few days and recovery is invariable. They are usually attributed to chill or to indiscretions in diet, but often such explanations are not forthcoming. A history of the kind is not given in any but one of the children (Case 12) and here it is only vaguely indicated in such terms as "always dyspeptic since birth," "subject to bilious attacks," and "once had jaundice." Perhaps a history of similar symptoms in other patients

[14] Acute Atrophy of the Liver. Brunton and Tunnicliffe, St. Bartholomew's Hospital Reports, vol. xxxii., 1896.

[15] Acute yellow atrophy has been attributed to action of specific germs (Klebs, Tomkins), that of streptococci (Nepveu), that of staphylococci (Bondilliér), and to the bacillus coli (Minz). Ballin, op. cit.

[16] Disorders of Digestion, 1886, p. 17, 1901, p. 364.

[17] Gazette des Hôpitaux, March 3rd, 1881.

[18] Medical Times and Gazette, vol. ii., 1860, p. 351.

might have been elicited on inquiry.[19] In future it seems advisable that such inquiries should be made and if affirmed the operations should be deferred except in cases of urgency. It is significant that several of the children who died had vomited with more or less frequency and severity during the 12 or 24 hours preceding operation. These occurrences should contra-indicate operation and the practice of admitting a child on one day to hospital and operating on the next should be discontinued. Although most of these children were described as "healthy looking" it may be that their standard of health would only pass muster in the surgical wards. Children suffering from the complaints for which these were treated are usually regarded as delicate at home and therefore, as subcutaneous fat covers a multitude of sins, in order to increase it they are plied with abundance of carbohydrates and cod-liver oil until their livers may store more fat than they can use.[20] Should the condition of *foie gras* be suspected a course of diet calculated to reduce it might be prescribed before operations are undertaken.

Allusion has already been made to the curious susceptibility which some showed to the action of carbolic acid when applied to the skin. In default of a more scientific test the drug might be used in this manner as a rough gauge of an equal susceptibility to the action of chloroform, carbolic acid being comparatively free from danger.

Lastly, the possibility of foreseeing whether chloroform may be dangerous in a given case by means of indications afforded by the urine must be considered.

In 1893 Sir Lauder Brunton[21] quoted Poehl of St. Petersburg as saying that in Russia "they are now able by analysing the urine beforehand to tell whether chloroform will be dangerous in any case or not." "If the quantity of alkaloidal substances which they can precipitate from it is great, the administration of the anæsthetic will almost certainly be risky, whereas if the alkaloidal substances are scanty the anæsthetic can be administered with perfect safety." Sir Lauder Brunton added: "Why death should occur in persons after a second or third administration has hitherto been a mystery, but it can now be readily understood on the supposition that from indigestion, imperfect action of the liver, or some other cause the alkaloids were more abundant at the time of the fatal administration than they were on the previous occasions."[22] It is obvious that these remarks of Sir Lauder Brunton have special application to the cases which are the subject of this paper. Whether the promise held out has been in any way fulfilled in Russia or the suggestion acted upon here I do not know. I believe that there are practical difficulties in carrying out systematic investigations of the sort. Large quantities of urine have to be examined in order to discover appreciable amounts of alkaloids or bacilli, whilst the quantity of alkaloids sufficient to prove fatal may be infinitesimally small and we cannot even be sure that the poison which presumably causes death is in existence until after the operation under chloroform has been performed. Yet this seems to be the only precautionary line which promises any success.

Before quitting the subject the practice of administering phloridzin before operations, which, I believe, has been suggested in order to test the adequacy of the kidneys, requires notice. Phloridzin by its action on the kidneys produces glycosuria, hence if after its administration sugar appears in the urine the kidneys are held to be sound.[23] The test may be of value so far as the kidneys are concerned, but, according to Romfeld,[24] phloridzin, like phosphorus, has the effect of causing storage of fat in the liver. If this be so the practice alluded to might be dangerous in cases where fatty liver already exists.

Diagnosis.—The diagnosis is not difficult if the peculiar character of the cerebral symptoms is borne in mind. The screaming and delirium so often noted should not be mistaken for the ordinary crying and fractiousness of a child in pain or "when feeling ill."[25] Jaundice would seem, of course, to be a valuable indication of danger, but it was only present in one of my cases. It occurred, however, in all the cases collected by Ballin. Yet in itself, apart from other symptoms, jaundice is not particularly alarming. It is mentioned in most text-books on anæsthetics as an occasional and insignificant sequel to operations under chloroform, no fatal instances being recorded. One case has been reported in which recovery took place after two attacks of jaundice supervening on operations under chloroform.

Treatment.—The mortality in my own cases shows the futility of the treatment adopted, which chiefly consisted in the free administration of alcohol combined with morphia, opium, and other anodynes and sedatives. Such treatment may be not only useless but positively harmful by preventing elimination of poisons. But citrate of caffeine and carbonate of ammonium and strychnia may be used as stimulants. The symptoms are those of acute yellow atrophy and Ballin collected cases which show that in adults this disease is actually present. Although I have not been able to demonstrate atrophy of the liver in children it cannot be doubted that the condition of fatty degeneration present is closely akin to it. Treatment, therefore, should be on similar lines. Active purgation, venesection, and saline transfusion are the only modes of treatment which afford any hope of success and should be promptly adopted. It is useless to wait until the child is comatose before having recourse to them.

In conclusion, it may be mentioned that in Schenck's experiments ether was also found to produce fatty changes in the livers of animals, though to a far less extent than chloroform. Hence when a fatty liver is suspected ether should be the anæsthetic used.

Upper Berkeley-street, W.

[19] This was so in two of the cases mentioned by Ballin, op. cit.

[20] In adults a corresponding fatty liver may be induced by alcohol, as suggested by Ballin (op. cit.).

[21] THE LANCET, Oct. 7th, 1893, p. 861

[22] Schenck, on the other hand, attributed these fatalities to repeating inhalations of chloroform before the fatty changes produced in the liver have had time to pass off.

[23] Dr. H. D. Rolleston informs me that Klemperer found that in seven out of ten cases of granular kidney phloridzin did not give rise to glycosuria.

[24] THE LANCET, July 17th, 1897, p. 169.

[25] THE LANCET, Feb. 24th, 1894, p. 370.

THE EDUCATION OF PHYSICALLY DEFECTIVE CHILDREN UNDER THE LONDON SCHOOL BOARD.[1]

BY F. MAY DICKINSON BERRY, M.D., B.S. LOND.,
ASSISTANT MEDICAL OFFICER TO THE LONDON SCHOOL BOARD.

THE following paper deals with the provision of education for children physically incapable of attending the ordinary elementary schools. I propose to approach the subject chiefly from the medical aspect, to give a somewhat detailed analysis of the various groups of cases now collected in special classes in London, to describe shortly the methods and arrangements adopted in these classes, and to discuss briefly the question how far any special provision for physically defective children is necessary or desirable. Before discussing the classes themselves a short account of the history of the movement may not be out of place.

Since 1892 centres have existed throughout London where classes are held for the instruction of mentally deficient children. In these classes there were also a certain number of cripple or delicate children who were unfit to attend ordinary schools. In 1900 the attention of the School Board was directed to the establishment of special classes for physically defective children only and as one of the medical officers of the Board I was instructed to examine and to report upon all the cripple children not attending school who had come under the cognisance of the officials of the Board. These children were collected together as far as possible for medical examination at different centres, but a large number had to be visited in their homes. Over 600 cases in all were examined and reported upon. As regards the diseases from which these children suffered, tuberculous affections of the joints headed the list, comprising 48 per cent. of the whole. Spinal caries and hip disease accounted for by far the greater part of these, being 22 and 20 per cent. respectively, leaving 6 per cent. for other joints. Most of these were chronic cases with a history of some years' duration. A large proportion had never been to school, some had attended school for a time and had left owing to difficulty with the stairs, a fall, or some other cause. Next in order of frequency were cases of paralysis—viz., 29 per cent. More than half of these (16 per cent.) were cases of infantile paralysis. In many of the cases the paralysis (usually not of the infantile variety) was associated with hydrocephalus, epilepsy, or imbecility. Rickets furnished a fair number—

[1] A paper read at the International Congress of Medicine at Madrid in April, 1903.

viz., 13 per cent. The remaining 10 per cent. were composed of miscellaneous cases; about one-seventh of these were epileptics. Among these large numbers of children suffering from chronic troubles it was evident that a considerable proportion would be capable of benefiting by education and of attending school under suitable conditions. About 29 per cent. were considered to be unfit for school of any kind. Such were children too seriously ill, cases of much suppuration, cases with acute symptoms, &c., and young children in whom it was thought attendance at school had better be delayed; also epileptics and imbeciles who are dealt with by different organisations. 7 per cent. were recommended for admission to ordinary boys' or girls' schools and 16 per cent. to infants' schools. The remaining 48 per cent. were reported as fit for instruction in special schools only.

Since this report was made the Board has been active in the establishment of suitable schools. One originally started as a philanthropic undertaking had already been taken over by the Board, seven more are now in existence, and several others are in contemplation. A nucleus for some of these centres was found in classes held for cripple children by philanthropic ladies, generally in association with the Invalid Children's Aid Association.

By an Act of Parliament of 1899 school authorities are empowered to make special provision for children either mentally or physically defective and children passed as such can be forced to attend a suitable centre and can be kept at school till 16 years of age, two years later than the obligatory age for normal children. Before admittance to any class each child must be examined and passed by a medical practitioner approved by the Government. There are now on the roll of these classes over 400 cases, nearly all of whom I have personally examined, and it is with the results of such examinations that I propose to deal. Table I. shows the various diseases from which these children suffer. The proportions are very similar to those recorded in the preliminary investigations:—

TABLE I.—*Analysis of Diseases in 404 Physically Defective Children.*

	Cases.		Cases.
Spinal caries	107	Rickets...	3
Hip disease...	101	Amputations	9
Disease of knee	27	Infantile paralysis	54
Other tuberculous affections	11	Other paralyses	36
Congenital dislocations of the hip	6	Morbus cordis	25
Scoliosis	5	Miscellaneous	20

Spinal caries and hip disease again come first. It may possibly not be without interest to go a little fully into the types of cases found in these two categories. The succeeding tables show some of the principal features of the cases:—

TABLE II.—*Cases of Spinal Caries: Duration of the Disease.*

—	Years.						
	Under 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	5 to 6.	6 to 7.
Number of cases ...	1	4	8	7	15	18	17

—	Years.						
	7 to 8.	8 to 9.	9 to 10.	10 to 11.	11 to 12.	12 to 13.	13 to 14.
Number of cases	11	4	2	3	1	2	2

The majority of cases are of long standing, the greater number being of from four to seven years' duration; only one case is under one year.

As to general appearance, 53 per cent. were noted as delicate or sickly in appearance. More than half of the cases presented considerable deformity; they were stunted children with obvious hunchback. The cases of slight deformity were largely cervical or lumbar cases. In many, especially those of dorsal caries, there was also marked chest deformity associated frequently with shortness of breath and with a history of chronic bronchitis.

TABLE III.—*Cases of Spinal Caries: Position of the Disease.*

Cervical region	10 cases	= 9·4 per cent.
Cervico-dorsal	15 ,,	= 14·2 ,,
Dorsal	61 ,,	= 57·5 ,,
Dorso-lumbar	9 ,,	= 8·5 ,,
Lumbar...	11 ,,	= 10·4 ,,

The dorsal spine, it will be observed, is the part much the most often affected.

TABLE IV.—*Cases of Spinal Caries: Position of the Disease in the Suppurative Cases and the Proportion of Suppurative Cases in each Group (Cervical, Dorsal, &c.).*

Position.	No. of cases of suppuration.	Percentage of suppuration.	Cases of suppuration still continuing.
Cervical	4	40	5—all slight.
Cervico-dorsal ...	6	40	
Dorsal	12	20	1 absent in hospital; abscess developed after admission.
Dorso-lumbar ...	4	50	1 slight.
Lumbar...	10		2 considerable.

A history of suppuration exists in one-third of the cases; this, as will be seen, is comparatively less frequent in the dorsal than in the lumbar and cervical cases. In nine cases only is suppuration still present; in most of these it consists merely in an old sinus with slight discharge.

Nineteen cases had a definite history of paralysis; in only one does it still persist. The proportion of cases of paralysis is about the same in the cervical and dorsal regions (see Table V.).

TABLE V.—*Cases of Spinal Caries: Position and Proportion of Paralysis occurring in each Group.*

Position.	No. of cases.	Percentage.	Remarks.
Cervical...	2	20	One child still has paralysis and loss of rectal control.
Cervico-dorsal ...	4	23	Two children have had laminectory performed.
Dorsal	13	23	Two children have incontinence of urine.
Dorso-lumbar ...	0	—	—
Lumbar...	0	—	—

Treatment.—The majority wear spinal jackets and are allowed to walk. Two children have had laminectomy performed; in one child the paralysis has disappeared and the other is in hospital with a return of the paralysis.

As regards complications, there were five cases of hip disease (one double), three cases of knee disease, one of the knee and lymphatic glands, and one of the knee, the elbow, and the ulna.

TABLE VI.—*Cases of Hip Disease: Period of Duration.*

—	Years.						
	Under 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	5 to 6.	6 to 7.
Number of cases ...	7	7	17	13	16	12	7

—	Years.					
	7 to 8.	8 to 9.	9 to 10.	10 to 11.	11 to 12.	12 to 13.
Number of cases	5	2	3	3	1	1

Here, too, the cases are mostly of long standing, the greater number being of from two to six years' duration, but there are a larger number of cases of short duration than was the case with spinal caries. These latter are all slight cases

without pain or other acute symptoms. In general appearance the children with hip disease compare favourably with the subjects of spinal caries; most are healthy and well nourished; only about 20 per cent. instead of 53 per cent. are noted as of delicate appearance.

Occurrence of suppuration.—Suppuration past or present is about twice as frequent in the cases of hip disease in our classes as in those of spinal caries, being met with in nearly 68 per cent. of the cases. Does this mean that suppuration is actually more frequent in hip disease or that death occurs in a large number of the suppurative cases of spinal caries, or that the patients become too ill for the question of their admission to school to arise? Suppuration still exists in 14 cases. Abscesses developed in nine of these after admission and some of these are temporarily in hospital.

TABLE VII.—*Cases of Hip Disease: Condition of the Joint.*

Slight cases—no pain and but slight limitation of movement	17 cases.
Joint moveable but movements much limited ...	17 ,,
Joint fixed, or nearly so...	44 ,,
Joint lax—unduly mobile	19 ,,

Treatment.—In 20 cases the patients have undergone a radical operation (excision in most cases). The rest have been treated, some by prolonged rest, with extension and weight, the majority by a Thomas's splint, to fix the joint, and probably a short period of rest.

TABLE VIII.—*Cases of Hip Disease: Treatment now being carried on and the Powers of Walking.*

—	High boot on sound leg. Crutches.	Thomas's splint.	No splint. Walk with crutches.	Walk without crutches.		
				Badly.	Fairly.	Well.
Slight cases	2	8	—	—	—	4
Limited movement ..	2	3	1	2	3	2
Fixed joints	2	13	3 (1 excision)	6 (1 excision)	8 (1 excision)	10
Lax joints	—	7 (5 excisions)	7 (all excisions)	7 (3 excisions)	—	—

The patients with lax joints all walk badly and several continue to use crutches though active disease is quite at an end. They certainly compare very unfavourably with the cases of fixed joints, many of whom have also suffered from prolonged suppuration, but in most of whom the surgery has consisted in opening abscesses or possibly doing localised scraping. A certain number of the children with fixed joints walk badly, owing to ankylosis in a faulty position, and several would be benefited by osteotomy. In reference to complications, spinal caries occurred in four cases, knee disease in two, and double hip disease in three.

As regards affections of other joints the knee furnishes by far the greater number of these cases; in some there is still active disease, but not of an acute form. A considerable number are cases of excision with ankylosis in a bad position, the children being unable to manage the stairs in an ordinary school.

TABLE IX.—*Giving an Analysis of the Cases of Paralysis.*

—	No. of cases.	Part affected.						
		One leg.	Both legs.	Arm and leg.	Arm and two legs.	Four limbs.	Speech.	General.
Infantile paralysis	52	23	21	2	4	—	2	—
Birth paralysis ...	25	—	11	6	2	4	12	2
Other forms of paralysis ...	11	—	—	—	—	—	—	

There are 52 cases of infantile paralysis. In all, one or both of the lower limbs were affected to a varying degree; the arm was affected as well in 3 per cent. of the cases. In ten cases the paralysis dated distinctly from a fit of convulsions, in four it came on suddenly with no fit, in two it was attributed to a fall, and in the remaining cases no definite history could be obtained. As regards the mental condition, one patient was slightly deficient; the others were nearly all intelligent children. Among paralyses of other kinds the largest group was that of paralysis dating from birth. In few of these could a history of injury at birth be elicited but all the cases presented similar features. In all there were an exaggerated knee reflex and absence of wasting; in some spastic rigidity and ankle clonus were present. The paralysis, though the brunt fell chiefly on certain limbs, was less absolutely localised than in infantile paralysis. There were often some general muscular weakness and imperfect power of coördination. In no case was one limb alone affected and in none was one or other of the lower limbs unaffected. One or both arms were affected also (always in conjunction with the corresponding leg) in seven cases—i.e., about 25 per cent. Speech was affected in as many as 15 cases, over 60 per cent. Besides this group of cases there were also some other cases, not easily classified, some of them coming on after illness (typhoid fever) and in one case after meningitis due to injury; there were also one case of Friedreich's disease and three of pseudo-hypertrophic paralysis.

TABLE X.—*Cases of Paralysis: Degree of Infirmity as regards Walking manifested by the Paralysed Children.*

—	Unable to walk at all.	Walk with crutches.	Walk without crutches.		
			Badly.	Fairly.	Well.
Infantile paralysis ...	15	12	6	11	8
Other forms of paralysis	12	4	10	8	2

The only other group which may be referred to is that of morbus cordis. Of this there were 25 cases, seven being congenital and 18 acquired.

TABLE XI.—*Giving the chief features of the cases of Morbus Cordis.*

Causation.	No. of cases.	General conditions.	No. of cases.
Rheumatic fever	10	Healthy	9
Chorea	4	Delicate	11
Unknown	4	Much cyanosis... ...	5

Such is a rather brief classification of the cases in our classes. No child is admitted before being examined by one of the medical officers of the Board. The selection of the cases is by no means without difficulty and it is often far from easy to refuse admission to cases one feels to be not wholly suitable. A schoolmaster or schoolmistress is often anxious to get rid of a child who is delicate or slightly lame for fear that it may meet with an accident; philanthropic persons seeing a child in the street with some lameness or deformity think that child must go to a school for cripples and stir up the parents to remove it from the school it is attending, or the parents of such a child seeing a neighbour's child taken daily to school by an official conveyance consider their child should have the same privilege. Sometimes a kind-hearted visitor finding a bedridden child left alone in a wretched home all day or seeing a child who has been ordered to be kept lying in splints running about in the street, try to get it into school, and cases respectively in too advanced or in too early a stage of disease are often brought for admittance.

The principles that guide me in the selection of cases are as follows. 1. If a child can with reasonable safety attend an ordinary school it should do so. 2. The classes are primarily educational and therefore unless the child is in a condition to benefit by the education it should not be admitted and the classes should not be looked on as places in which merely to carry out hospital treatment or to counteract parental neglect. 3. If the child is in such a condition that attendance even at a special class might be detrimental it is refused. This is, of course, often a difficult point to decide upon. As a rule, early cases of spine and hip disease

and any cases with acute symptoms are refused. 4. Lastly, any case likely to be prejudicial to the others or offensive in school has to be refused. A child with definite pulmonary phthisis is not admitted, nor are cases with much suppuration nor are epileptics, unless the fits are of very infrequent occurrence. Cases of spina bifida with incontinence of fæces and most cases of incontinence of urine have to be refused.

Management of the special schools.—The number of children in each class is not allowed to exceed 20. The hours are somewhat shorter than those in the ordinary schools, beginning at 9.30 A.M. and ending at 3.30 P.M. There is an interval of one and a half hours for dinner. A hot dinner, consisting of meat or fish, vegetables, and pudding, is provided, for which the parents pay 2*d*. a day. I look upon this dinner as one of the great advantages which the children derive from this school attendance—there is undoubtedly in many cases great improvement in the physical condition consequent upon it. So many of the children are underfed or improperly fed at home, tea and bread-and-butter, with perhaps dried fish or pickles as a relish, forming often the staple diet. There is a fully trained nurse at each centre whose duty it is to see to all the dinner arrangements and to give any assistance that may be required in the management of the children.

Furniture.—As regards the furniture this is fairly simple. Most of the children sit in specially arranged cripple chairs with back and arms, moveable foot-rest, and a desk for books to fit on when required. Those who must be kept recumbent have cane couches. There are a few self-propelling wheel chairs for paralytic children.

Conveyance.—The question of conveyance is an important one. The distance from which children have to be gathered for a special centre must be considerable and it is obvious that in any case only a few of such children as we are considering would be able to walk or to come in public conveyances. In our schools those children who cannot come alone are fetched daily in an ambulance which is much like an omnibus in appearance. It has a seat reaching the whole length below and a shelf similarly placed above like the berth in a sleeping-car for the accommodation of children on stretchers. It is part of the nurse's duty to fetch the children in this conveyance and to take them home after school. Each ambulance makes either two or three separate rounds. Two of the centres have already two ambulances, the others have one, with the exception of one centre which as yet has none. A few children are brought to school by their relatives in spinal carriages and a considerable number walk—i.e., about 20 per cent. The average number of children that an ambulance conveys to school is 32; of course, the number that can be brought on each round depends on how many have to be kept recumbent.

Medical supervision.—Each centre is visited at least monthly by one of the medical officers of the Board. Medical treatment is, of course, not given. In a few cases obviously neglected at home the nurse does the necessary dressings; but as practically all the children are attending some hospital or are under their own medical advisers we think it is wiser to leave such matters to hospital or to home responsibility.

Utility of the classes.—The question presents itself, how far are the children likely to benefit by the education which is being bestowed upon them—how many are likely to become useful members of the community? It is best to take the principal groups of affections separately from this point of view.

Spinal caries.—A certain proportion of these children will doubtless never reach adult life, some of those admitted have already died, and a good many, even if their spinal disease is cured, are so much crippled by lung trouble that it is not likely they will live long lives or be ever able fully to earn their own living. On the other hand, a fair proportion are healthy and may reasonably be expected to continue so and will probably be able to hold their own in the struggle for existence.

Hip disease.—In cases of hip disease I think the prognosis is much better. The great majority of those under consideration are healthy. A few will doubtless die from this disease or from tuberculosis elsewhere, some will probably have recrudescence of the disease and have still a long period of suppuration to go through, but the large majority of children will reach adult life and be healthy. Those who are left with much lameness (as, for instance, most of our cases of excision) will find themselves handicapped in obtaining employment, but the others will mostly earn their own living without undue difficulty. This is shown to be the case by the observations made at the Alexandra Hospital for Hip Disease where many of the cases are kept under observation till well into adult life.

Paralysis.—Some of our cases of infantile paralysis are slight and were only admitted because they could not manage the stairs in the ordinary school. A great many, on the other hand, are so crippled that it is doubtful whether they will be able to earn their own living—at least, more than partially. The same may be said with still more emphasis of the other forms of paralysis—most of the children with birth palsy will be able to do but little. But perhaps to these unfortunate children more than to any of the others are these classes a boon, brightening an otherwise miserable and monotonous existence. Amongst these, too, I think we find the most definite evidence of physical improvement due to their school surroundings. Many of them have considerably improved in muscular power, chiefly owing to patient exercise of the affected parts by the nurse. Several who could not walk at all when admitted have learned to do so since. I might perhaps mention in relation to this part of my subject a very valuable adjunct to the schools, though in no way officially connected with them—viz., a committee of persons interested in cripple children who are called the "After-care Association," and who when the children leave school keep them under observation and help them to learn a trade or to obtain employment.

Lastly arises the question, Are such schools as we are considering necessary, seeing that they must be of necessity costly? Could not most of the children attend the ordinary schools? The conditions in the elementary schools in London are such that it is not easy for feeble children to be adequately looked after. The schools are huge buildings with stone staircases; the infants are on the ground floor, but boys and girls have usually to mount several flights of stairs. Down these stairs there is a great rush when the children are let out and weakly ones are likely to be pushed down. Under different conditions a good many of the cases now in special schools would attend ordinary schools. Where a school is on the ground floor, if a little extra care be given or precautions taken by the teacher and if a few extra appliances for their comfort be allowed (such as chairs with supports for the back) undoubtedly many of these children could attend. But such conditions are not to be obtained as a general rule in London and probably equally little in other large cities. Besides there are a certain number of our children who are too crippled to attend any but a special school. Many also are too delicate to learn in a large class and to keep pace with normal children—for this reason and also because they are often extremely backward owing to want of instruction, many require special tuition. I think, therefore, that at least in large cities there certainly is need of such special centres as I have been describing.

In this country (Spain), where begging appears to be almost the sole occupation open to the destitute cripple, the desirability of some such provision for education is specially brought before the mind of the traveller.

Wimpole-street, W.

PERFORATIONS OF THE GALL-BLADDER; TREATMENT BY INVAGINATION.

BY H. A. LEDIARD, M.D. EDIN., F.R.C.S. ENG.,
SURGEON TO THE CUMBERLAND INFIRMARY.

THE first example of perforation of the gall-bladder met with in my private practice was in 1894, when a male patient, aged 70 years, was found with a distended abdomen, pain, vomiting, and all the symptoms of intestinal obstruction. The cause of the sudden illness and death in three days being obscure a post-mortem examination was made. An abscess in the region of the gall-bladder was found and there was perforation of the gall-bladder, general peritoneal infection, and 515 gall-stones of various sizes, but all small, in the gall-bladder. The weight of the stones was under one and a half ounces. The patient had not suffered from jaundice or biliary colic and so far was suspicion from falling on the gall-bladder that I

explored an old hernial sac but found it empty. The case was, moreover, seen with me by an eminent physician without the cause of the sudden attack being diagnosed.

The next opportunity I had was in March of this year when Dr. W. R. Speirs of Haltwhistle asked me to visit a female patient, aged 47 years, who suffered from jaundice, fever, and tenderness in the region of the gall-bladder. Attacks of biliary colic had lasted on and off for three years but generally yielded to hot applications and opium, and were not followed by jaundice, bile-stained urine, or chalky stools. When I first saw her on March 26th the abdomen was flat, but when I went to operate upon her gall-bladder a week later the abdomen was swollen and a tumour of the size of an adult head existed in the middle line of the abdomen, the highest point of distension being rather below the umbilicus. It was clear that something had altered the appearance and in consequence the incision planned was changed to a cut in the middle line over the swelling. On reaching the peritoneum matted omentum and recent peritonitis were met with, and on passing the finger upwards towards the liver a gush of thick yellow bile escaped over the wound to the amount of some half a dozen ounces. On swabbing the discharge the upper surface of the liver was seen to be thickly covered with adherent lymph. The gall-bladder was next discovered in a mass of matted omentum, with a gangrenous-looking perforation on the anterior surface near the fundus. A gall-stone of small size was seen lying outside the gall-bladder. After the bile had been removed with swabs I enlarged the perforation with scissors and removed 13 small gall-stones, packed the gall-bladder with gauze, and cleaned the abdomen. The perforation was invaginated and stitched with Lembert's sutures, one suture passing through the edge of the liver, owing to rottenness of the gall-bladder wall. The entire abdomen was now flushed out with salt solution and the wound was then closed absolutely. The patient suffered from shock and had a subnormal temperature for a few days and was fed rectally for some five days, but made a good recovery.

Those interested in district nursing may be pleased to learn that the entire preparation of the operation was carried out by one of those able and devoted women whose field in a country practice is so wide and whose hands are always fully occupied. The success of this operation has been largely due to Dr. Speirs, Dr. J. G. Stuart, and Dr. G. J. Williams of Haltwhistle.

With regard to the closure of the perforated gall-bladder I followed the lead of Mr. G. H. Makins, who recently read a paper at the Clinical Society of London on the invagination plan of closing perforations of the intestine met with in cases of strangulated hernia, and possibly he may be glad to know that his valuable paper[1] has already borne fruit.

Carlisle.

THE INFLUENCE OF DIET IN PREGNANCY ON THE WEIGHT OF THE OFFSPRING.

BY D. NOEL PATON, M.D., F.R.C.P. EDIN.,

SUPERINTENDENT OF THE RESEARCH LABORATORY OF THE ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH; LECTURER ON PHYSIOLOGY IN THE EDINBURGH SCHOOL OF MEDICINE.

(From the Laboratory of the Royal College of Physicians of Edinburgh.)

IN the course of a study of the diets of the families of the poorer labouring class in Edinburgh it became evident that poverty and the resulting deficiency in diet tell most severely in the early years of married life when a number of young children have to be provided for. As the children grow older their earnings increase the family income and remove the pinch of poverty. In this class every individual thus runs a risk of suffering from deficient nourishment at two periods—during the early years of childhood and during the first few years of married and, in women, of child-bearing life. The further questions are thus raised: How far does malnutrition of the mother during pregnancy influence the growth of the child? Do the children of the poor and badly nourished start life at a lower level than the offspring of those who are better fed?

Prochownick,[1] whose object was to determine if by reducing the diet of the mother the size of the child might be so diminished that labour should be facilitated in cases of narrow pelvis, concludes that by restricting the diet of the mother the size of the child may be markedly diminished. He gives 48 cases in which, as a result of such regulation of the diet, the average weight of the child was: in 24 males 2960 grammes and in 24 females 2735 grammes. In eight cases in which the sex was unstated (excluding a case of twins) the weight was 3354 grammes. The average weight given in Vierordt's "Daten und Tabellen" for normal infants is: males, 3333 grammes; females, 3200 grammes; average of both sexes, 3250 grammes. Thus in Prochownick's series the male children were 11 per cent. under the average and the females were 14 per cent.

It seemed to me that the investigation of the question in the human subject is by no means satisfactory, since so many disturbing factors are apt to come into play during pregnancy and since it is really so difficult to determine whether the diminished size of the child is the result of less complete growth or simply the result of premature labour. In the lower animals the many physical and mental disturbances which may interfere with the course of pregnancy in the human subject are absent, while the course of gestation is rarely modified in length. In selecting an animal for the investigation it seemed advantageous to choose one which breeds freely and which has a short period of gestation. For this reason guinea-pigs were selected. Their period of gestation is ten weeks. As early as possible in their pregnancy the females were isolated, each being kept in a separate cage and weighed every three or four days.

The first point to be determined was whether well-fed guinea-pigs produced the same weight of young irrespectively of the number of the litter, and, if so, to ascertain what is the proportion of the weight of young produced to the weight of the mother. The following results were obtained from fully fed guinea-pigs:—

I.—3 young born on June 3rd weighed ...	...	210 grammes.
Mother weighed	...	585 ,,
II.—2 young born on Oct. 2nd weighed ...	...	200 ,,
Mother weighed	...	480 ,,
III.—3 young born on Nov 5th weighed ...	...	225 ,,
Mother weighed	...	600 ,,
IV.—2 young born on Nov. 16th weighed	...	215 ,,
Mother weighed	...	545 ,,
V.—2 young born on June 4th weighed...	...	168 ,,
Mother weighed	...	505 ,,
VI.—4 young born on Oct. 15th weighed	...	184 ,,
Mother weighed	...	555 ,,
VII.—3 young born on Nov. 10th weighed	...	221 ,,
Mother weighed	...	725 ,,

In these seven observations, each gramme of mother produced the weight of young in grammes as shown in Table I.

TABLE I.

Number of observation.	Number of young.	Weight of young per gramme of mother.
I.	3	0·35
II.	2	0·40
III.	3	0·37
IV.	2	0·39
V.	2	0·33
VI.	4	0·33
VII.	3	0·30
Average	2·7	0·35

These observations seem to show: (1) that the weight of young is independent of their number; and (2) that the weight of young produced in well-fed guinea-pigs bears a close relation to the weight of the mother.

In one case a well-fed guinea-pig produced an abnormally small weight of young. This was an old female which had only one young one weighing 155 grammes, while the mother weighed 700 grammes. Each gramme of mother had here produced only 0·22 gramme of young.

[1] THE LANCET, April 4th, 1903, p. 962.

[1] Therapeutische Monatshefte, September, 1901, p. 446.

While these observations were in progress another set of pregnant guinea-pigs were kept upon a low diet which was regulated so as to check the rapid increase in weight of the pregnant animal. Misfortune attended this series. On two occasions the pregnant animal was destroyed by a dog and on another it received an injury which ended fatally. Of the seven animals kept upon low diet four yielded results as follows:—

I.—2 young born on June 3rd weighed ... ... 133 grammes.
Mother weighed ... ... 595 ,,
II.—3 young born on Dec. 29th weighed ... ... 139 ,,
Mother weighed ... ... 507 ,,
III.—Young (number not noted) born on Sept. 18th weighed ... ... 120 ,,
Mother weighed ... ... 480 ,,
IV.—2 young born on May 1st weighed ... ... 130 ,,
Mother weighed ... ... 639 ,,

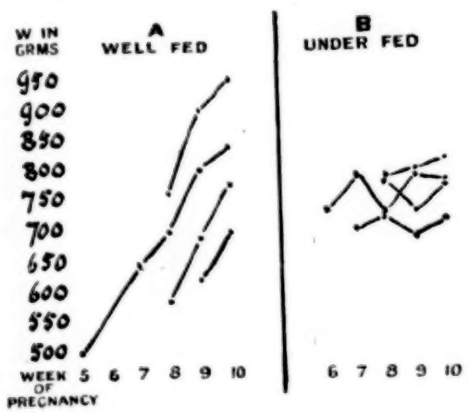
In these observations each gramme of mother produced the weight of young as shown in Table II.:—

TABLE II.

Number of observation.	Number of young.	Weight of young per gramme of mother.
I.	2	0·22
II.	3	0·27
III.	—	0·25
IV.	2	0·23
Average	2·5	0·248

In none of these cases was the weight of young per gramme of mother equal to that in the well-fed guinea-pigs, the heaviest litter in an under-fed animal being 10 per cent. less per gramme of mother than the smallest litter in the well-fed animals. The average weight of the litter was no less than 28 per cent. below that of normal animals. In no case was there any indication that the births were premature, the young animals always presenting the character of full-time guinea-pigs and being active and vigorous.

The rate of increase of weight in the two series of guinea-pigs during the progress of gestation is shown in the accompanying chart.



Showing rate of growth of four well fed (A) and of four under-fed (B) guinea-pigs during the later months of pregnancy.

Conclusions.—These observations, though few in number, are so concordant that they warrant the conclusion that the size of the offspring depends very directly upon the diet and nutrition of the mother during pregnancy. While this explains the easy labours among the healthy lower classes and confirms Prochownick's conclusion that by dieting the mother the children of rickety women may be so reduced in size as to be viable, it also probably helps to explain the very high infant mortality among the very poor. The infant starts life at a low level and readily succumbs to the hardships to which it is too often subjected.

To the physiclogist the point of chief interest seems to by the demonstration of the limitations in the extent to which the tissues of the mother can be utilised for the construction of the embryo. The nourishment of the maternal tissues seems to take precedence over the nutrition of the fœtus. Were this not the case, had the embryo the prior claim to nourishment, we should find that in badly nourished mothers each gramme would produce a greater proportionate weight of young than in well-nourished mothers. This is exactly the reverse of what occurs. The mother thus appears to pass on the *surplus* nourishment to the fœtus and the better the nutrition of the maternal tissues the greater is the growth of the young in utero.

Edinburgh.

THE BIOLOGICAL ACTION OF MOULDS ON ARSENICAL COMPOUNDS.

BY H. DE R. MORGAN, M.A. OXON., M.R.C.S. ENG., L.R.C.P. LOND., D.P.H. CANTAB.

(From the Bacteriological Department, Jenner Institute of Preventive Medicine.)

As far back as 1874 Selmi[1] discovered on the walls of rooms papered with arsenical papers (the inmates of such rooms suffering from arsenical poisoning) certain moulds giving off gas, which gas he considered to be arseniuretted hydrogen. Langendorf, when examining a case of arsenical poisoning from wall-papers at Breslau, came to the same conclusion, but it remained for Gosio in 1892 thoroughly to investigate the matter. He found that on keeping potato broth to which arsenic had been added in a cellar for a week a mould was formed on the broth which emitted an odour resembling garlic, which gas when passed through a solution of silver nitrate gave a precipitate which showed the presence of arsenic. The moulds he found to be almost exclusively penicillium glaucum, aspergillus glaucus and mucor mucedo, and by experimenting with different varieties of moulds he discovered that penicillium brevicaule evolved this toxic gas in the highest degree. He concluded therefore that the toxic effects from arsenical wall-papers were due to moulds growing on such papers in damp rooms and emitting an arsenical gas. Gosio also proved by experiment that penicillium brevicaule was sensitive to very minute traces of arsenic, for on being grown in the presence of even 0·000001 gramme of arsenious acid the garlic-like odour was emitted. He found also that in the presence of large quantities of arsenic the growth of the mould was not inhibited. These two experiments I have tested myself and I found that on growing penicillium brevicaule on bread paste in a small flask, to which had been added one gramme of sodium arsenite, a very intense odour of garlic was emitted. The arsenical gas produced by growing penicillium brevicaule in the presence of arsenic was proved by Biginelli to be diethyl-arsine. He obtained his proof by the following method.[2] The gas produced by growing penicillium brevicaule in the presence of sodium arsenite when passed into a hydrochloric acid solution of mercuric chloride causes the formation of colourless crystals of the double compound $As\text{-}H(C_2H_5)_2 + 2\,Hg\,Cl_2$—hence he recognised it as diethylarsine.

As regards the cultural reactions of pencillium brevicaule it grows readily on all ordinary media, both liquid and solid, showing a decided preference, however, for starches and sugars, such as bread paste, potato, saccharose broth, and glycerine agar. Its optimum temperature is about 37° C.; it grows much less rapidly at 20° C. It coagulates litmus milk at 37° C. on the fifth day without acidifying it and grows freely on all sugar media without production of gas or acidity.

In confirming the experiments of Gosio and others I made use of Francis Cevey's suggestion of taking an Erlenmeyer flask containing bread crumbs, the flask and contents having been previously plugged and sterilised in the steamer on three successive days, adding either the suspected substance or a known quantity of an arsenical compound, and inoculating the mixture with penicillium brevicaule by pouring over

[1] Selmi: Nuovo processo generale per la ricerca delle sostanze velenefiche e osservazioni sullo sviluppo d'idrcgene delle muffe (Bologna, 1875).

[2] Atti Reale Accademia dei Lincei, 1900.

it a peptone beef broth emulsion of this mould and its spores. I found the best method of producing this emulsion was to pour a tube of the broth into a glycerine-agar culture of the mould, the culture being 15 days old, and then to scrape off as much of the mould and its spores as possible with a stout, sterile, platinum spatula. The flasks thus inoculated were then plugged and the whole of the neck was covered with gutta-percha tissue. A control flask was made in a similar manner and they were then incubated for 24 hours at 37° C. On opening the flasks at the end of 24 or 48 hours, even 0·000001 gramme of arsenic reveals itself by a distinct smell of garlic, which seems to increase for the first 48 hours and then gradually to diminish, till after the fifth or sixth day it is imperceptible, the time of its continuance varying according to the amount of arsenic present. By this means I was able to detect in wall-papers a very small quantity of arsenic, confirming the mould test by Marsh's test. In cases where Marsh's test showed a wall-paper to contain less than $\frac{1}{10}$th of a grain of arsenic per square foot the garlic smell was produced. Unfortunately, however, in this experiment the result was not always constant, for on repeating the experiment it was found that in some instances where a certain wall-paper had given the characteristic smell it failed to do so on a second occasion and *vice versâ*.

My experiments with arsenic in beer were not so successful, owing partly to the fact that in order to induce the mould to grow the beer had to be neutralised with caustic soda and sweetened with cane sugar before it was poured into the flasks, and partly to the fact that the garlic smell produced by small quantities of arsenic was overpowered by the smell of the beer itself, such small quantities as $\frac{1}{10}$th or $\frac{1}{20}$th of a grain per gallon of beer being quite undistinguishable. As $\frac{1}{10}$th of a grain of arsenic per gallon of beer is considered a dangerous amount[3] this test is not suited for detecting the presence of arsenic in beer. It might be used as a preliminary test for the invert sugar sometimes used in brewing, but in any case, being a qualitative and not a quantitative test, it is of little practical value. By Reinsch's test Sheridan Delépine was able to demonstrate one part of arsenious acid in 10,000,000 parts of beer.[4] The limit of demonstrating with any certainty the quantity of arsenic in beer by means of the penicillium brevicaule test I have found to be 1 in 10,000 parts of beer.

As to the biological method of producing this gas, it remains still a matter of uncertainty. It was suggested to me by Dr. Allan Macfadyen that it might be due to the action of some enzymes present in the cell juices. To elucidate this I grew some penicillium brevicaule on saccharose broth at 37° C., skimmed off two grammes, and washed it well in water till the latter came off quite clear. Then so as very thoroughly to express the juices both from the mycelium and the spores I made use of Macfadyen and Rowland's liquid air grinder, such as they use for grinding micro-organisms in order to express their intracellular contents. This grinder consists of a metal pestle the under surface of which is roughened and which fits accurately into a metal mortar or pot. The pestle is then kept revolving and at the same time elevated and depressed alternately by means of a mechanical arrangement. During the process of grinding the pestle and mortar are kept immersed in liquid air. This intense cold, about −190° C., serves the double purpose of preventing chemical change during the grinding and at the same time of rendering the substance to be ground excessively brittle. By this method such small things as the typhoid bacilli themselves can be disintegrated *en masse* and reduced to an amorphous pulp, as seen under the microscope.

Having, then, as I said, introduced two grammes of the washed mould into the grinder, the material was ground at the temperature of liquid air for two and a half hours, at the end of which time when some of the pulp was placed under the microscope there was found to be no trace left of either mycelium or spores. Some of this pulp was then, whilst still frozen, dropped into tubes containing various solutions of sodium arsenite and arsenious acid, but no smell of garlic was produced, either at once or after 24 hours' incubation at 37° C. This negative result was obtained both in the case of very young cultures of the mould and old sporing growths when treated in the same way. To ascertain, moreover, whether any enzymes had been given off into the saccharose broth on which the penicillium brevicaule had been grown, various quantities of filtered broth were added to tubes containing arsenical solutions in the same manner as previously described, but in this case, too, no smell of garlic was produced, either at once or after 24 hours' incubation at 37° C. It is therefore possible that Albert Maassen is correct in saying[5] that "the reducing property of the cells of animals and microbes is due to the presence of a substance which can exercise this power even when removed from the tissues, but the formation of methyl or ethyl derivatives seems to be really dependent on vital processes occurring only in the organism."

As regards the practical value of this penicillium brevicaule test for arsenic it has three great drawbacks: (1) that it is not a quantitative test; (2) that the smell of garlic is liable to be overpowered by the smell of the substance tested; and (3) that it is not constant in its results; in fact, this test is rather a biological curiosity than a reliable test for arsenic, to judge from the experiments which I have been enabled to carry out.

[3] Occurrence of Arsenic in Sugars, Malt, and Beer, by B. E. R. Newlands and Arthur R. Ling, Journal of the Institute of Brewers, 1901.

[4] Arsenic in Modern Life, Journal of Sanitary Institute, October, 1902.

[5] Chemisches Centralblatt, 1902, pp. 1245-46.

THE ORTOL REACTION AS A MEANS OF DISTINGUISHING RAW MILK FROM BOILED.

BY CARSTAIRS C. DOUGLAS, M.D., B.Sc., F.R.S. EDIN., F.F.P.S. GLASG.,

PROFESSOR OF MEDICAL JURISPRUDENCE AND HYGIENE, ANDERSON'S COLLEGE MEDICAL SCHOOL, AND DIRECTOR OF THE WEST OF SCOTLAND CLINICAL RESEARCH LABORATORY, GLASGOW.

A COLOUR reaction which is of some interest and which is suggested as a means of distinguishing raw milk from boiled was described by Dr. J. E. Saul in a recent number of the *British Medical Journal*.[1] Having looked into the matter a little and having performed the test in a large number of varying circumstances it has occurred to me that a brief note on the matter may not be amiss.

The test is simplicity itself. To perform it a few drops of a 1 per cent. solution of the organic compound ortho-methyl-amino-phenyl-sulphate are added to raw milk or to milk which has not been raised above a certain temperature; this is followed by the addition of a drop of weak peroxide of hydrogen (five-volume strength) when, within a very short time—usually less than half a minute—a very deep reddish-pink colour develops throughout the fluid. The reaction is singularly striking. When the same procedure is carried out with milk that has been boiled, though but for one minute, no change in colour is seen or at most the production of a faint brown tint. Dr. Saul in his paper describes this as a means of differentiating "raw" from "sterilised" milk, but this is somewhat misleading. What most medical men and practically all the laity understand by "sterilised" milk means milk raised to a temperature of 70° C. (158° F.) and kept at this for a period of 30 minutes, more or less—a process often designated by the special term of "pasteurisation." Such milk, however, reacts readily to the reagents, which therefore do not serve to distinguish raw milk from this pasteurised, or so-called "sterilised," milk, but only from milk raised to a higher temperature than that at which pasteurisation is usually carried on. This temperature I find to be 75° C. as a minimum. The following short table will show how the reaction is lost as the temperature rises:—

Milk kept for	20	minutes at	70·0° C.	reacted	strongly.
,, ,, ,,	15	,, ,,	74·0° C.	,,	feebly.
,, ,, ,,	5	,, ,,	75·0° C.	,,	negatively.
,, ,, ,,	1 minute	,,	80·0° C.	,,	,,
,, ,, ,,	½	,, ,,	90·0° C.	,,	,,
,, ,, ,,	¼	,, ,,	99·5° C.*	,,	,,

* Or boiling point of milk.

It would appear, therefore, that it is at about 75° C. that the reaction ceases to be given. The addition of acids, even the strong mineral acids, does not discharge or alter the colour to any extent, but alkalies convert it into a pale *café au lait* tint. Sour milk reacts as well as fresh.

As the compound ortho-methyl-amino-phenyl-sulphate is difficult to procure, Dr. Saul advises the use of "ortol'

[1] Brit. Med. Jour., March 21st, 1903.

instead—a substance used by photographers and consisting of the above body mixed with quinol. I have always employed it and I have for the sake of brevity ventured to call the test the "ortol reaction." Ortol is a finely granular powder of a pale flesh tint and the test can readily be performed by adding to five cubic centimetres of milk in a test tube a few granules of the powder and then a drop or two of solution of peroxide of hydrogen (from five to ten volumes) or what I find answers equally well, a similar amount of ozonic ether as employed in the guaiac test for blood. Dr. Saul suggests that the reaction is lost, not by any change in the ordinary chemical constituents of milk (proteid, sugar, fat, and salts), but by the destruction of some ferment or enzyme which possesses oxidising powers and which is rendered functionless at a high temperature just as many of the digestive ferments are. In support of this view I may cite the fact that I find fresh saliva acts in a similar way to raw milk, whereas, if boiled first, the reaction is lost. Fresh blood has only the faintest effect in developing a colour, whereas liquor pepticus, liquor pancreaticus, and malt diastase all share the property of raw milk and fresh saliva, though in a less active degree. In the case of human milk a colour change is also produced though not so rapidly sometimes as in cow's milk.

The reaction is not the only one recommended as a means of distinguishing between raw and boiled milk. In the April number of the *Annales d'Hygiène Publique et de Médecine Légale*, Ledé describes another method based on the loss of oxygen while milk is boiled. In this test a little peroxide of hydrogen is added to the milk in question and if the latter has been boiled the oxygen is taken up at once from the peroxide, whereas if it has not been boiled (and thus still contains its normal oxygen) it will now have a superfluity of the gas and the presence of this excess is demonstrated by the effect produced on a starch potassium-iodide mixture. Another test is that proposed by Schardinger [2] and based on the fact that fresh milk warmed to from 40° to 45° C. with a methylene-formalin-blue solution discharges the colour, while with a boiled milk the blue tint is retained.

Glasgow.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON SYPHILITIC RHEUMATOID AFFECTIONS.[3]

BY DOCENT G. SINGER.

SYPHILITIC rheumatoid affections often appear in the eruptive stage of the disease but still more frequently in the tertiary stage. According to Baumler they are characterised by remittent fever and by their tendency to get better under treatment with potassium iodide. But remittent fever is also peculiar to pyæmic forms of rheumatism and other diseases besides syphilis are benefited by the iodides. Of five cases of syphilitic rheumatoid disease which have come under my observation in the past three years four occurred in the tertiary stage and of these four one was complicated with myositis and osteo-periostitis.

The diagnosis of such cases is not easy. They are marked by arthritis, capsular swelling and thickening, and by periostitis which may last for years without causing any very serious functional troubles, this being the contrary to what occurs in other rheumatic inflammatory processes. Syphilitic rheumatic affections are not so painful as ordinary rheumatic affections and fever is often absent. Specific treatment gives good results even after the disease has lasted for many years.

The syphilitic nature of these processes, which may pass for cases of chronic rheumatism, may be suspected when there are present exostoses, abortion (in women), symptoms of hereditary syphilis, progression of the disease without fever, increased pain at night, and the very infrequent occurrence or complete absence of any heart affection. Chronic arthritis, however, which arises from other causes such as gonorrhœa, may also give rise to a similar train of symptoms. Treatment by mercury or the iodides gives excellent results and the success of this treatment may be in general taken as a proof of the nature of the disease, although great success follows a similar method of treatment in cases of rheumatism arising from staphylococcic or streptococcic infection. It is recommended that all cases of rheumatism in which the etiology is doubtful should be treated with anti-syphilitic remedies.

Vienna.

[2] Zeitschrift für Untersuchungen der Nahrungs- und Genuss-Mittel, 1902.

[3] Abstract of a paper read before the International Congress of Medicine at Madrid in April, 1903.

NOTE ON HYPERTROPHY OF ONE BREAST.

BY JOHN R. GIBSON, M.D., F.F.P.S. GLASG.

RECENTLY I attended a young woman, 22 years of age, in her first confinement, which passed off satisfactorily. When putting on the bandage I was struck by the great size of the left breast compared with that of the right which was of normal size. I got the following history. At puberty the left breast developed very much more quickly than the right, so much so that in a few months from the start of its growth her dressmaker had to insert a pad over the right one to make her bust symmetrical. It gave her no annoyance except from its weight. At the present time the right breast is a normally developed breast for a woman of her size and figure. The following are the measurements. The right breast measured horizontally from the base over the nipple 7½ inches and vertically 7½ inches, the circumference at the base being 15 inches. The corresponding measurements of the left breast were 16½ inches, 16½ inches, and 26 inches respectively. It will be seen from these measurements that the breasts *per se* are quite symmetrical.

Both breasts secreted milk, the larger one seeming to be especially active and from the feel appeared to be made up for the most part of glandular tissue; the veins over it were also much enlarged. I am aware that hypertrophy of both breasts is not altogether rare, but I do not remember having read about or seen one breast only hypertrophied.

Paisley.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

LONDON TEMPERANCE HOSPITAL.

A CASE OF COMPLETE SUPRAPUBIC PROSTATECTOMY.

(Under the care of Sir WILLIAM J. COLLINS.)

FOR the notes of the case we are indebted to Mr. J. S. Hosford, surgical registrar.

The patient, a man, aged 71 years, had suffered for several years from frequent micturition and difficulty in passing urine, and for the last two years had been dependent almost entirely on the catheter for relief. For the last 12 months he had suffered "agony" and he had latterly passed the catheter nearly every hour. His sleep was greatly disturbed and his bed was nearly always wet. His general health was otherwise not bad, though he had lost a great deal of flesh lately. Per rectum a very large prostate was felt; he suffered a good deal from constipation. A No. 8 coudé catheter was passed without much difficulty but with a good deal of pain and sometimes it drew blood. The urine was alkaline, turbid, and contained a little muco-pus but not much albumin and no sugar.

The patient was admitted to the London Temperance Hospital under the care of Sir William J. Collins on Jan. 24th, 1903, and on Feb. 12th, as the patient was clearly going downhill and was very much depressed, Sir William

Collins decided, with the patient's concurrence, to perform prostatectomy. Under chloroform the bladder was washed out and then distended with boric lotion. A three-inch median incision was made above the pubes, the recti were separated, and the bladder was exposed and incised. The left index finger was then introduced and the mucous membrane over the right lobe of the prostate was scraped through. The prostate was then enucleated from its surroundings and with the aid of two fingers in the rectum it was detached and removed without tearing away any mucous membrane. The hæmorrhage was not very great and ceased on washing out the bladder with hot boric lotion. Sutures were inserted at the upper and lower ends of the wound in the parietes and a large tube was inserted and retained with a stitch, while a soft rubber catheter was tied in the urethra.

For the next three or four weeks nearly all the urine passed through the wound. The catheter caused irritation and was left off after the fourth day, though the bladder was irrigated daily. The patient's general condition soon began to improve greatly and the freedom from frequent micturition and the return of undisturbed sleep gave untold relief. The temperature continued normal except during four or five days a fortnight after the operation when he appeared to have some catarrhal attack. By March 20th (36 days) the suprapubic wound was soundly healed and on the 23rd he could pass urine naturally and easily, some half pint or more at a time, and it was acid. His strength improved and he was most emphatic in his statements as to the enormous relief which the operation had afforded him. He is now quite well and can project his urine a distance of several feet when micturating.

Remarks by Sir WILLIAM COLLINS.—Having had the opportunity of witnessing an operation and of seeing the prostates removed by Dr. P. J. Freyer, it seemed to me that the removal of the prostate through the bladder in such a case as this was not only a feasible operation but one of great promise in one of the most distressing and painful complaints that the surgeon is called upon to witness. This purely mechanical block to micturition in men of late middle life who, but for it and the inflammatory and other complications which it brings in its train, are often in relatively sound health and capable of useful work, can, it would appear, be removed by an operation not unduly risky and

The figure (from a photograph) represents the removed prostate, somewhat shrunken; a glass tube has been placed between the lateral lobes in the groove occupied by the prostatic urethra.

founded upon a scientific basis. With but little difficulty I was able to enucleate the prostate and the prostate only; in this case the removed "gland" weighed two ounces and a reproduction of a photograph of it is shown herewith. The gland has shrunk from having been placed in spirit. The old notion of "atony" as explanatory of the difficulties of micturition accompanying hypertrophied prostate will have to be revised. Where the kidneys are sound and the patient's trouble centres wholly or mainly around the prostatic blockade it seems that complete suprapubic prostatectomy is destined to bring relief to many a sufferer heretofore doomed to a slow and wretched death.

PS.—On June 12th I heard from this patient saying that he had had no obstruction and passed urine freely and speaking in grateful terms of the relief which he had obtained. I have since performed a similar operation on a man aged 70 years, with the same good results.

LONDON HOSPITAL.

CASES OF PREGNANCY COMPLICATED WITH DERMOIDS.

(Under the care of Dr. G. E. HERMAN.)

CASE 1. *Dermoid of the mesentery, discovered in the sixth month of pregnancy, and removed by abdominal section; delivery of a living child at term.*—The patient, aged 34 years, was admitted into the London Hospital on Oct. 14th, 1902. She began to menstruate at 15 years of age and had always been very irregular, the intervals being usually five, six, or seven weeks, and the flow scanty. Before marriage menstruation was attended with much pain, but not since. She was married at the age of 25 years and had three children, the last four years previously; she had not been pregnant since. She said that she had always been "weak" but had otherwise had good health. The labours had been easy. Between four and five months before admission she noticed a lump in her abdomen which moved about from one side to the other. It was tender when touched and caused an unpleasant sensation as it moved about. Her last menstruation ceased on May 21st, 1902, and she believed herself to be pregnant. On examination the uterus was found to reach nearly to the umbilicus and the fœtal heart was heard over it. A firm round lump of about the size of a cricket ball was felt, when first examined, in the left flank. It did not fluctuate. It was extraordinarily moveable, could be pushed across the abdomen from one side to the other, and movements imparted to the tumour did not affect the uterus. It was concluded that the tumour was either an ovarian cyst or a uterine fibroid with an unusually long pedicle. The rarity of dermoids of the mesentery prevented it occurring to anyone that the tumour could be of this nature.

Dr. Herman operated on Oct. 21st. The abdomen was opened. The uterus and ovaries were first explored and found to be perfectly healthy and free from adhesions. The moveable lump was then sought for and found above and to the left of the uterus. It was grasped and brought up through the wound. It was a cyst having a broad attachment mainly to the mesentery of the small intestine but in small part to the bowel itself. The attachments of the cyst were to a large extent broken down with the finger and in doing so the bowel was torn. It was at once sewn up with catgut sutures. The thickest part of the attachment of the tumour was transfixed and tied in the same way as usual in ovariotomy. Bleeding points in the mesentery whence the tumour had been detached were picked up and tied. The abdomen was then closed in the usual way.

The only drawback to smooth recovery was long continuance of vomiting. The patient was almost persistently vomiting for three days after the operation; but the temperature never exceeded 99° F. and the pulse was only once over 80. After the fourth day the patient was able to take nutriment. On Nov. 9th she left the hospital well. On Feb. 22nd, 1903, she was delivered at her own home of a living daughter.

The notes of the case were taken by Dr. W. E. Heilborn, late resident accoucheur, and Mr J. H. Thomas, clinical clerk.

CASE 2. *Ovarian dermoid in the pelvic cavity obstructing delivery; removal during the first stage of labour.*—The patient, aged 33 years, was admitted to hospital on Jan. 31st, 1903. She had been married 12 months and believed herself at the full term of pregnancy. A "show" began eight days before admission and she had ever since had slight pains. The "waters broke" on the morning of admission. On admission the uterus reached to the lower ribs. The outline of the fœtus was felt but the fœtal heart was not heard. By the vagina the os uteri was found dilated to the size of a

florin. Through it the sagittal suture was felt, the bones being unusually moveable upon one another. Below it was a rounded elastic tumour of the size of a lawn-tennis ball.

Dr. Herman opened the abdomen and found that the tumour was a cyst of the left ovary which was kept down in the pelvis by the fœtal head which filled the brim. He then with the hand in the abdomen pushed the head out of the brim into the right iliac fossa. Dr. H. R. Andrews then from the vagina pushed the tumour above the pelvic brim and Dr. Herman then grasped it, brought it out through the abdominal incision, tied the pedicle, removed the tumour, and closed the abdomen in the usual way. After the tumour had been removed the fœtal head came down into the pelvis. As soon as the os was fully dilated the child was delivered with forceps. It had been dead for some time before delivery. The mother made an uneventful recovery.

The notes of the case were taken by Mr. R. Norman, resident accoucheur, and Mr. G. T. Western, clinical clerk.

Remarks by Dr. HERMAN.—The interest of the first of these cases lies in the rarity of the condition present. It may be suggested that the dermoid was originally ovarian, but had become attached to the mesentery and detached from the ovary. Doran[1] is of opinion that most non-ovarian dermoids are examples of this process; that "since surgeons have made a rule of carefully searching the pelvic viscera when performing abdominal section, we have not heard of non ovarian abdominal dermoid cysts in women." In this case the ovaries were examined and there was nothing abnormal in the condition of either of them; and that abdominal dermoids may occur independently of the ovary is shown by their occasional presence in males.

Case 2 illustrates the proper way of dealing with an ovarian cyst obstructing delivery—viz., to remove it. Pushing it up, if this be possible, is not a curative measure; and it is not possible when, as in this case and in one which I reported in the *Journal of Obstetrics and Gynæcology of the British Empire* for September, 1902, the head or breech of the child is being driven down into the pelvis by the action of the uterus. But when the abdomen has been opened the presenting part of the child can easily be pressed aside and the tumour then pushed or lifted out of the pelvis into the abdomen. If the tumour is so large that there is not room in the pelvis for the tumour and the hand with the fingers bent it can be pushed up by the fingers of an assistant in the vagina as was done in the two cases in which I have operated for dermoids obstructing delivery. In each case after removal of the tumour the presenting part at once came down into the pelvis. There is no necessity after the removal of a dermoid obstructing delivery to perform Cæsarean section, as has been done. The labour may be left to take its natural course. It may be possible to remove such a tumour through the vagina, but especially if the tumour is high up, and if it is adherent, the abdominal method is easier and enables the operator the better to see what he is doing.

Medical Societies.

OBSTETRICAL SOCIETY OF LONDON.

Continuation of the Discussion on Deciduoma Malignum.

A MEETING of this society was held on June 16th, Dr. EDWARD MALINS, the President, being in the chair.

Dr. A. L. GALABIN, in resuming the discussion of Dr. J. H. Teacher's paper on Chorion-epithelioma and the Occurrence of Chorion-epitheliomatous and Hydatidiform Mole-like Structures in Teratomata, said that he had from the first been a believer in the view that the so-called deciduoma malignum was the result of pregnancy and that it was a fœtal epithelioma implanted upon the mother. He had listened, therefore, with great satisfaction to the convincing demonstration which Dr. Teacher had given of both these propositions. He had been himself convinced by the relation not so much to pregnancy as to vesicular mole. The frequency of vesicular mole was estimated at only about 1 in 2000 pregnancies. Not more, therefore, than about one woman in every 20,000 at the most would have had at any given time a vesicular mole within a year. But in deciduoma malignum vesicular mole was the antecedent in something like half the cases and this proportion had been maintained from the earliest record up to the present. There was already at the time of the discussion in the society in 1896 ample demonstration that there was a causal relation between vesicular mole and deciduoma malignum, since out of 40 cases then recorded vesicular mole had preceded in 18. When the number recorded had reached 90 the number preceded by vesicular mole was 49. The relation to pregnancy in general would hardly be denied if that to vesicular mole were admitted, especially since the disease more often followed an abortion than a full-term pregnancy. The existence of a similar structure in some cases of sarcoma of the testis was then quoted as an objection to deciduoma malignum being a result of pregnancy. But if such a structure were found only in tumours classed as embryomata from their resemblance to the imperfect development of an ovum he thought that this was not an objection but an argument in favour of deciduoma malignum in the uterus being derived from a fertilised ovum. Even if a structure resembling deciduoma malignum were found in other parts of the body this would be no argument against its specificity in the uterus, or its being the result of pregnancy there, unless it could be shown that in the uterus deciduoma malignum occurred quite outside the age of possible pregnancy. Since malignant disease of the body of the uterus was much commoner after the menopause than before, deciduoma malignum, if it were an ordinary tumour, should be found long after the menopause. But, on the contrary, the average age for it was 31 years, just the middle of the period of fertility. Although cases had been recorded up to the age of 55 years and as much as two years after the menopause, this was obviously no proof that they were not the result of pregnancy, since the disease might be latent for a time. It was a further step to show that the tumour was a chorion-epithelioma. The chief proofs were the continued vitality of villi after death of the embryo, as shown at the last meeting by a section of ovum retained five months in utero; the identity of appearance of the syncytium and the cell masses of deciduoma malignum, with the syncytium and cell masses seen in early pregnancy and especially in vesicular mole; the continuity of the syncytium with the syncytium of the villi when villi were present in the tumour; and the few cases recorded in which actual villi were present not only on the primary growth but in metastases. He had shown at the last meeting a section of vesicular mole with cell masses as well as syncytium resembling those of deciduoma malignum. The same was shown still better in the beautifully stained sections exhibited by Dr. Stevens, one from his (the speaker's) case of deciduoma malignum. The size and appearance of the cells, their nuclei, and the karyokinetic figures in them, were identical. He did not, however, think it advisable to change the name, since if a name were in general use it did not matter much that its derivation was erroneous. No one wanted to change the names of decidua reflexa or decidua serotina. In the term of "deciduoma malignum" had been comprised a definite clinical group of tumours, characterised not only by their causation, but by their high malignancy and tendency to form metastases both in the neighbourhood and in the viscera and to lead to extensive necrosis and formation of blood spaces. Some few of these showed only cells and no syncytium and had the appearance of sarcoma. They were therefore certainly not syncytioma and it was difficult to show them to be chorion-epithelioma, although he believed that they might be such in their origin. He did not think that Dr. Teacher's figures showed so conclusively that the cell masses of the tumour were directly derived from Langhans's layer of the villi. The point could best be studied in the vesicular mole which showed similar cell masses. If these were so derived the first step ought to be the formation of a cluster of cells covered in a cap of syncytium. He had occasionally seen this but more often the cell masses appeared to be separated from the villus by the syncytium. If the syncytium and Langhans's layer were both modifications of the fœtal epiblast it seemed probable that one might be converted into the other and that syncytium might become differentiated into cells.

Dr. H. R. SPENCER said that it was in London at University College Hospital that the first case of deciduoma in this country had been observed (in 1889) and it was at the Obstetrical Society of London that the first case was

[1] Transactions of the Royal Medical and Chirurgical Society, vol. lxviii., 1885.

recorded (in 1895). It was also the discussion on that case and two others at the Obstetrical Society in 1896 that first aroused general interest in this remarkable disease in the United Kingdom. Many cases of the disease had been observed in London during the last few years, though they had not all been published, and when published not always under the same name. A great deal too much attention had been devoted to the name. For his own part he preferred the name given by Karg to Sänger's case—deciduoma malignum; the object of a name was to act as a label and not as a definition and "deciduoma malignum" served the purpose of a distinctive label sufficiently well. He thought that there was some inconsistency in Dr. Teacher's deprecating the inclusion of the disease in the classes of sarcoma or carcinoma and then calling it "chorion-epithelioma." Dr. Spencer thought that the chief merit of the discovery of this disease belonged to Chiari rather than to Sänger. It was in any case owing to Chiari's publication (1877) and the report of his cases in Ruge and Veit's treatise "Der Krebs der Gebärmutter" that his own attention had been drawn to the remarkable occurrence of "cancer" of the body of the uterus after labour in women of 23 and 24 years of age and that he had been led to investigate the case alluded to above. With regard to the pathogeny of the disease he thought it was absolutely established that it arose from the epithelial covering of the chorionic villi. In the discussion at the society in 1896[1] he had opposed the view of Dr. Kanthack and Dr. Eden and had brought forward evidence to show that the disease originated in the products of conception. He had also published a paper in the *Quarterly Medical Journal* for July, 1896, giving the principal facts of 40 cases of deciduoma malignum and he regretted that these facts had not been allowed to prevail against the theories of the critics. He had on those occasions drawn attention, amongst other points, to the striking fact that in at least 45 per cent. of cases the disease followed a hydatidiform mole, which itself showed overgrowth of its epithelial covering, and he had alluded to Apfelstedt and Aschoff's case as proving, if the evidence were corroborated, the origin of the growth from chorionic villi. The corroboration had been forthcoming in several cases published since that date which, in his opinion, clearly proved that these growths arose from the epithelial covering of the chorionic villi. The excellent demonstration given by Dr. Teacher would help to promulgate that view.

Dr. T. W. EDEN referred in some detail to the opinions which gained acceptance at the discussion of this question by the society in 1896 and he was now prepared to admit that the decision then arrived at was wrong. In the short paper which he had read to the society in 1896 he had indicated that in his opinion the theory of Marchand could only be satisfactorily proved by demonstrating the actual development of the tumour from structures definitely recognisable from placental relics. The condition, he admitted, had been amply met by a number of cases since. In the same paper he had also suggested that the syncytial and cellular elements in deciduoma malignum had the same origin, the syncytial masses being formed by degeneration and fusion of the cellular elements. This view was now accepted. And not only so, but Peters had shown that in the human ovum the physiological prototype of these elements bore precisely the same relation to one another; the chorionic epithelium was at first entirely cellular, but on the cells coming in contact with the maternal blood degeneration and fusion of cells occurred, producing what he called the plasmodial or syncytial layer. At the discussion in 1896 it was pointed out that syncytial masses similar to those found in deciduoma malignum occurred in malignant testicular growths the origin of which from placental relics was out of the question. This fact had recently been re-discovered by Schlagenhaufer and had caused a great deal of perturbation in the minds of their German colleagues. Schlagenhaufer's case, however, was clearly a teratoma and it was difficult to understand why this observation of Schlagenhaufer should be regarded as in any way affecting the validity of Marchand's theory of chorion-epithelioma.

Dr. F. J. MCCANN said that he had had three cases of deciduoma malignum under his care during a comparatively short space of time. The first patient was a woman, aged 35 years, who was admitted to the Samaritan Hospital in July, 1901, suffering from continuous hæmorrhage from the vagina for three and a half months. This hæmorrhage was alleged to date from a miscarriage, but the history of the passage of ovuline structures was indefinite. She was extremely anæmic. Under anæsthesia on July 17th the uterine cavity was dilated and a distinct bulging was felt at the upper and back part. This was covered by smooth mucous membrane. On attempting to separate the lower portion of the tumour the finger could be passed into the uterine wall and the surrounding softened tissue suggested a malignant growth. The uterus was therefore removed by vaginal hysterectomy. The patient has remained in good health since the operation without any evidence of recurrence. The second patient was a woman, aged 46 years, who had had six children, the youngest being nine years of age. Her menstrual periods were regular and scanty, lasting two days. In August, 1901, she had an attack of bleeding, clots and fluid blood being passed per vaginam. This bleeding ceased and did not recur until the end of December, 1901. After this date there was daily loss of blood from the vagina. She was admitted to hospital on March 19th, 1902. On examination she was found to be extremely anæmic. The uterus was enlarged, mobile, and painless. The fundus could be felt as high as the mid-point between the umbilicus and the symphysis pubis. She was anæsthetised and on introducing the finger into the uterine cavity the wall was found to be lined by a series of irregular nodules undergoing necrosis on the surface. A bluish flattened nodule of about the size of a sixpence was seen in the anterior vaginal wall. As this was evidently a secondary growth no operation was attempted. The uterine cavity was swabbed out and the patient returned to bed. For a time her general condition improved, but later increasing weakness accompanied by dyspnœa supervened. The physical signs in the lungs indicated secondary deposits. She died on May 23rd, 1902. A post-mortem examination demonstrated the existence of secondary nodules in both lungs. The third patient was aged 53 years and had ceased menstruating for 18 months. This case was already fully reported in the *Journal of Obstetrics and Gynæcology of the British Empire* for March, 1903. The uterus was removed by vaginal hysterectomy and its cavity was found to be completely filled with blood and clot. Her last pregnancy terminated nine years previously at the third month. She was admitted to the Samaritan Hospital in March, 1902. These three cases demonstrated three distinct clinical types of uterine new growth. In the first case the growth was polypoid and circumscribed; in the second it was diffused throughout the uterine mucosa; and in the third the uterine cavity was entirely occupied by blood clots. The last type had been described under the terms "angio-sarcoma," "cavernous sarcoma," and "sarcoma telangiectodes." Dr. McCann thought that in the future such cases would be shown to be of the nature of deciduoma malignum. They seemed, moreover, to be of comparative rarity. The description of specimens where the disease had been actually shown to originate from the coverings of the chorionic villi had completely revolutionised previous ideas as to the etiology of the condition. For those cases where the occurrence of a previous pregnancy was difficult to prove the theory that "fœtal relics" had persisted in utero seemed to be a fitting explanation. The rarity of the disease appeared to have been exaggerated, for no less than six cases had been observed at the Samaritan Hospital during a comparatively short period. The degree of malignancy appeared also to vary in different cases.

Dr. C. H. J. LOCKYER said that in January, 1902, he read a paper before the society on a case of Chorion-epithelioma with Pulmonary Metastases and by a series of lantern slides he traced the origin of the syncytial masses and Langhans's cells back to the walls of the chorionic villi; he also endeavoured to point out that if the fœtal trophoblast was accepted as the precursor of Langhans's layer of the syncytium the term "deciduoma" was a misnomer for a growth containing these elements in its composition. For such growths a name should be chosen which would indicate their true origin and after careful study of eight specimens of this disease he chose the term "chorion-epithelioma" for his two published cases as being the most fitting nomenclature for this purpose. Dr. Teacher had gone further than Dr. Lockyer was formerly prepared to go by concluding that every so-called deciduoma malignum was a chorion-epithelioma, whereas Dr. Lockyer's experience led him to the conclusion that there were cases in which the histological features differed in essential details from chorion-epithelioma.

Dr. H. RUSSELL ANDREWS showed two specimens of

[1] Transactions of the Obstetrical Society of London, 1896, p. 181.

Chorion-epithelioma. The first was a specimen which had been in the museum of the London Hospital for many years, labeled "Cancer of the uterus." Microscopical examination proved it to be a chorion-epithelioma. The second was shown before the society in 1886 by Dr. A. H. N. Lewers as a specimen of circumscribed sarcoma of the uterus with secondary deposits in the vagina and lungs. Although in some sarcomata, especially in those which were sometimes called peritheliomata, cells were often seen which resembled syncytium, yet the vacuolation, which was so characteristic of chorion-epithelioma, was not seen in these. The complete absence of vessels in chorion-epithelioma was also an important point in distinguishing these tumours from sarcomata, in which vessels, although often ill-formed, could always be found.

Dr. TEACHER, in rising to reply, thanked the society for the kind manner in which his paper and demonstration had been received. He then briefly reviewed the various interpretations which were now being offered of those embryomata (or whatever they might be called), the relative merits of which he felt must be left for future consideration. In reply to the question whether placenta had ever been found in an undoubted teratoma he quoted the case recorded by Mayer. Laparotomy in an anæmic but well developed man aged 19 years revealed a tumour lying between two folds of the root of the mesentery. It consisted of a well-formed trunk and limbs without a head, but in place of it a long tuft of hair. This imperfect fœtus was inclosed in an amniotic sac; a thickening of the amnion connected with the superior mesenteric artery showed the histological structure of placenta. There was also a case in a sheep described by Rathke in 1830 in which a female fœtus was attached to the head of a male fœtus by an umbilical cord which passed into the skull and ended in a well-formed placenta growing on the dura mater. Excluding the tubal cases there remained 181 which Dr. Teacher had analysed. In 16 of these the occurrence of a preceding pregnancy was not clear from the history. In two of these villi were present; in four cases no history was obtained, either because they were cerebral cases the nature of which was discovered only at the necropsy or for other valid reason. Of the ten remaining cases nine occurred in women between 24 and 44 years of age. Was it possible to exclude pregnancy in those cases? In many cases the disease was continuous with the pregnancy; this fact should explain the absence of a distinct preceding pregnancy in most of those nine cases. There were several cases in women of nearly the same age who had not been pregnant for many years and then developed tumour. In eight out of nine cases over the age of 50 years the preceding pregnancy was molar. As an example might be taken the case of Gunther (recently reported by Marchand, a photograph from which was included in Dr. Teacher's demonstration). The patient was 53½ years old; her last child was born in her thirty-ninth year and then after 13 years she had a hydatidiform mole which passed on into chorion-epithelioma. An apparent menopause was recorded in two clear cases besides that of Dr. McCann. The following explanation, which might apply to all these long interval cases, had been offered by Marchand. It was well known that portions of epidermis included in the closure of some of the embryonic clefts might lie latent 10 or 20 years or even longer and then develop into tumours. In view of that he thought that there was nothing strange about portions of trophoblast lying latent three or four years and then springing into renewed activity. The hypothesis that those cases might be really of teratomatous nature Dr. Teacher regarded as quite unnecessary. Cases of chorion-epithelioma without syncytium had been mentioned. There were three cases in which the typical sprawling masses were absent, but none of these could really be said to contain no syncytium as they all showed syncytial derivatives like the syncytial wandering cells. These cases and the "pure syncytial" cases, all of which actually contained individual cells, although not typical Langhans's layer cells, Dr. Teacher would regard as varieties of no great importance in view of the relationship which existed between the two layers of the chorionic epithelium. In all of his tumours the relative amount of the different elements varied considerably in different parts of the growth. With regard to the question of nomenclature, Dr. Teacher said that "syncytioma" was not a good name because the syncytium was not the characteristic element of chorion epithelioma. The Langhans's layer cells and large individual cells of intermediate type were equally characteristic. Almost any feature of the growth taken by itself could be paralleled from other tumours, but not the combination of features. Lastly, the most characteristic thing was the physiological prototype. He preferred a name which indicated the source of the tumour and he thought that the most appropriate name was chorion-epithelioma or, if they preferred it, chorio-epithelioma. He was also in favour of allowing the historic "deciduoma malignum" as a clinical term, since it was so well known and so generally used. Moreover, the theory implied in it was so completely abandoned that the term had practically ceased to be misleading.

NEUROLOGICAL SOCIETY OF THE UNITED KINGDOM.

Physiological and Pathological Demonstrations.

A MEETING of this society was held at Edinburgh on June 27th, under the presidency of Professor LANGLEY. The attendance was large and the exhibits and demonstrations were numerous and interesting. From 10 to 11.30 A.M. physiological and pathological demonstrations were given in the physiological laboratory of the University.

Dr. A. H. H. SINCLAIR described the method of testing the field of vision with small white test objects after the method devised by Bjerrum and he showed charts so taken in various conditions of disease.

Dr. W. FORD ROBERTSON gave a lantern demonstration illustrating the results of bacteriological, histological, and experimental investigations into the pathology of General Paralysis. He stated that the investigation was by no means complete but that he put forth the matter more as a hypothesis than as a proved conclusion. The points specially illustrated were the occurrence of a bacillus resembling the Klebs-Löffler bacillus in the catarrhal exudations in the respiratory and alimentary tracts and the pathological changes produced, especially in the nervous system, in rats by feeding with pure cultures of this organism. These changes were in certain respects of the same character as those that occurred in general paralysis. In reply to some criticisms that were made Dr. Robertson said that it was hardly fair to call upon him to defend the conclusion that this bacillus was the specific organism of general paralysis. Dr. M'Rae, Dr. Jeffrey, and himself had never formulated this conclusion; they had merely advanced a hypothesis to this effect, based upon certain bacteriological investigations which they had made. Experimental investigations must determine whether this hypothesis was to be retained or rejected. He submitted that in an inquiry of this kind the scientific method was to formulate the hypothesis that seemed to agree best with the facts as far as ascertained and to endeavour with a perfectly open mind to obtain additional evidence that would either disprove or establish this hypothesis. There was really no other way open to them.—Dr. T. S. CLOUSTON said that at first he was entirely sceptical as regards the influence of micro-organisms in producing such a disease as general paralysis, but that he was now in the position of a sceptic undergoing conversion. He thought that such a line of inquiry as that spoken of by Dr. Ford Robertson was of the greatest importance as regards the future of psychiatry.—Dr. BYROM BRAMWELL asked what was the relation between general paralysis and tabes dorsalis, for whatever was the cause of the one was the cause of the other, and if they were due to an organism then the same organism ought to be found in either disease. He himself had great doubt that the organism which Dr. Ford Robertson had described was the cause of general paralysis and he inquired whether any acute cases of the disease dying from some intercurrent disease had been examined.—Several other members took part in the discussion and such questions as the following were asked. Was the infection described not a terminal infection, as was so often seen at the end of chronic illnesses, as, for example, a "coli" infection? If the disease were due to this organism, ought it not to be found in the cerebro-spinal fluid removed during life by lumbar puncture? As the pupillary phenomena sometimes showed themselves ten years even before the paralytic symptoms, did Dr. Ford Robertson think that the infection began at this early period?—Dr. FORD ROBERTSON replied.

Dr. ALEXANDER BRUCE exhibited, by means of the lantern, sections of the Spinal Cord to show the localisation of function in the lumbo-sacral part of the cord. In one case

of amputation at the knee the nuclei supplying the muscles below the knee had undergone degeneration. In the second case a rare opportunity was afforded of localising the centres in the lumbo-sacral part of the cord. It was a case of amputation at the hip and on account of tuberculosis practically all the muscles attached to the os innominatum were removed, only the deep muscles being left (the psoas, the iliacus, and the external rotators of the hip). The first case demonstrated that the muscles below the knee were almost entirely supplied by the postero-lateral and post-postero-lateral groups of nerve cells in the lumbo-sacral part of the cord. In the second case degeneration of the nerve cells had begun as high up as the second lumbar segment. At the level of the third lumbar segment only three or four cells were seen in the section to be intact and at the level of the fourth segment the whole of the nerve cells showed Nissl's "reaction at a distance." Much the same appearances continued throughout the sacral segments of the cord.

Dr. D. WATERSTON gave a lantern demonstration, on behalf of himself and Dr. D. Hepburn, of photographs of sections of the Spinal Cord of the Porpoise (Phocæna communis). He stated that the investigation had been undertaken in order to determine the effect which was produced upon the shape of the grey matter of the cord and on the groups of motor cells in a mammal with such altered musculature as one of the cetacea. The fore-limbs were rudimentary and the hind-limbs were entirely absent. It had been found that the different segments of the cord had characters by which each could be recognised from any other. The groups of cells were pointed out in the cervical region and it was shown that in the lumbo-sacral region there was an absence of lateral groups of cells such as were found in man. There was a marked lumbar enlargement in which the anterior horns of grey matter were elongated and contained deeply placed nuclei for a special nerve supplying abdominal and perineal muscles. A condition of heterotopia of the grey matter in the posterior columns was also demonstrated. On the whole, the investigation corroborated views which had been recently brought forward as to the function of some groups of cells in the human spinal cord.

Dr. R. A. FLEMING gave a lantern demonstration of the Neuroglial and Vascular Changes in the Optic Nerve in cases of Optic Neuritis and Optic Atrophy following on intracranial tumour.

Clinical Meeting.

A clinical meeting was held in the Royal Infirmary at noon when a large number of most interesting cases were shown.

Dr. CLOUSTON demonstrated three cases of Exophthalmic Goitre to illustrate the mental condition often found in advanced cases of this disease. All three patients were affected with ideas of persecution and of grandeur. The first case was that of a woman, aged about 35 years, who had been under treatment in the medical wards for a considerable time and who had at last been transferred to the asylum. She had ideas of poison in her food as well as those of wealth, her sensations being generally of a morbid nature. The toxic influence of this disease was similar to the action of alcohol on the brain. The second case was that of an oldish woman. In her case the thyroid gland was only slightly enlarged but she had had a hard life, had suffered from many diseases, and had undergone almost every influence which caused nerve depression. She had hallucinations—ideas of expansion as well as perversions of ordinary sensations. In all Dr. Clouston's large experience of giving thyroid gland substance to patients he had never found that it produced symptoms at all like those of exophthalmic goitre. The third case was also in an oldish woman and the disease had persisted for four years. It had commenced in acute melancholia and now she also had delusions of persecution and grandeur. The last two patients, though imagining that they were being poisoned, yet took their food and were well nourished and indeed fat.

Dr. BYROM BRAMWELL showed: 1. The only really successful case of Removal of a Cerebral Tumour which he had met with. The case was that of a man whose disease began in 1899 in what was considered an epileptic fit. Then attacks of Jacksonian epilepsy developed; these began in the left foot. There was also localised tenderness over the right motor area of the cerebrum and the patient became emaciated. There were no other symptoms. Mercury and iodide of potassium were administered vigorously. Mr. J. M. Cotterill saw the patient in consultation and an operation was decided on. On opening the calvaria a tumour of the size of a Tangerine orange was found attached to the meninges of the brain. It was a sarcoma and was removed. The patient suffered very severely from shock and, in fact, nearly lost his life. An excellent recovery was, however, made and at the present time he states that he never felt better in his life, although there is still a little weakness in the left leg and foot. No part of the brain substance was removed. 2. A case of Tabes with Optic Atrophy. Benedickt stated positively that when this disease began in optic atrophy the affection soon became arrested. If this were so this case was exceptional. The patient was a man, aged 34 years. When first seen five years ago he had all the signs of preataxic tabes. Two years previously to this, however, he had become blind from optic atrophy and the pupils were dilated. The patient remained absolutely well until 18 months ago when lightning pains commenced in his legs and six months later ataxia began to develop. At present the ataxia was so marked that he could not stand. Such a case absolutely disproved the dogmatic statement of the arrest of the disease when optic atrophy showed itself primarily. Dr. Bramwell had observed a number of similar progressions of this disease. The next two cases were illustrative of hæmorrhage into the spinal cord. 3. A boy who in September, 1901, was suddenly seized with Paralysis in jumping off a car. At first it was the left leg which was paralysed completely, but it soon extended to the left arm and then to the right arm and leg. The onset was absolutely sudden, as the boy was in perfect health up to the moment of jumping off the car. After the first few days there was no tactile defect. The perception of heat and cold was, however, markedly perverted and this had persisted ever since. He was very ill at first and the bladder had to be opened on account of hæmorrhage taking place into it. Bed-sores formed and he developed a septic temperature. Eventually he recovered, but the defect of sensation was marked. The localisation of touch was perfect all over the body, as was also that of pain, but from the level of the nipples downwards to the toes he confounded the sensations of heat and cold. The case had evidently been due to hæmorrhage into the central region of the spinal cord and was probably into a syringomyelia. 4. A man, aged 44 years, who, though previously quite well, suddenly and completely Lost the Power in his Legs without feeling any pain in his back. There was also marked paralysis of the arms and the hands remained in the position of tetany. He also suffered from cramps. The localisation of touch and pain was perfect, but here also there was a marked alteration in the temperature sense. He made an excellent recovery, but from the level of the nipples downwards there were analgesia and loss of the temperature sense. The lesion was also probably a hæmorrhage into a latent syringomyelia 5. A man who had been under observation for seven years suffering from extremely Severe Gastric Crises which recurred once in every six or seven weeks and each lasted from ten to 14 days. There was no ataxia, but the Argyll-Robertson phenomena, lightning pains, and difficulty in micturition were present. Marked hypotonia was present and his movements were acrobatic. The patient was being treated with the x rays to the back and with remarkable benefit. Dr. Bramwell had seen good results from this light treatment in two other cases. The improvement might, however, be only psychical.

Dr. G. A. GIBSON showed a man, aged 68 years, who was suddenly seized with Disturbance of Vision. The patient had been absolutely steady as regards alcohol until one day when doing hard work he took two glasses of whisky and the next day four glasses. The following day he complained of a general dimness of vision and found that the half of every object was blotted out. There was complete right-sided homonymous hemianopia. There was no change in ordinary sensibility or in the senses. He was, however, on the verge of word-blindness and could only read large type and by aiding himself by his muscular sense in forming the letters with his fingers. At the outset of his trouble he suffered from disturbance of his memory, forgetting his name and place of abode. The lesion was either cortical or more probably subcortical.

Dr. JOHN THOMSON showed: 1. A boy, aged three and a half years, who had suffered from birth from Lateral Head-rotating and Conjugate Nystagmus. His gait was cerebellar and he tended to fall backwards. He was, however, quite intelligent and began to speak when two years of age. 2. A

boy, aged six years, who exhibited a condition not previously described. There was a fine general tremor of most of the voluntary muscles on the slightest exertion. On extending the arms and protruding the tongue there was a constant fine tremor very noticeable on laying the hands over the muscles. There were no sensory change and no rigidity. His intelligence was above the normal and the condition was noticed soon after birth.

Dr. R. A. LUNDIE exhibited a rare case of Infantile Oculo-facial Palsy (Gowers) in a woman, aged 54 years. The affection was nuclear in origin and affected some or all of the ocular muscles as well as those of the face. There was nothing in the woman's family history to account for the condition. She had a squint which was operated on when she was of the age of five years; this might have been a paralytic squint. Her parents stated that she had natural movements of the face as a little child, but so long as she herself could remember she had had no power in the facial muscles. For 28 years at least she had had a left-sided squint and 21 years ago an operation was performed on her right eye. Since this operation the patient dated her loss of power of the lateral movements of the eye. Her present condition showed that the face was flattened out; though the movements of the tongue were perfect those of the lips were absent. She had a considerable vertical movement of the right eye but less in the left. The lateral movements were lost in both eyes. The iris reacted to light but not to accommodation. The levatores palpebrarum acted to a certain very slight degree and so did the facial muscles. The paralysis was not absolute. The corneæ were protected by the eyeballs being rolled up under the eyelid.

Professor W. S. GREENFIELD exhibited a boy, aged 18 years, who was evidently the subject of a Pituitary Tumour. He had been absolutely healthy until Feb. 7th, 1903, when he was suddenly seized with intense frontal headache and vomiting with loss of memory. These symptoms were not severe during the mornings and persisted for several weeks. He was admitted to the infirmary on March 12th, when his condition showed a marked thickening of the lips, nose, and face generally. The hands and feet were full and thick. Marked torpor was present and he slept for many hours consecutively. There were a swelling of the glands and tenderness on the left side of the neck. Mastoid disease was absent. The facies and general appearance led to a diagnosis of acute acromegaly, probably due to disease of the pituitary body. At present there was double optic neuritis of great intensity, associated with hæmorrhages and fine degeneration around the yellow spot; slight paresis of some of the ocular muscles, as the sixth, was evident. Sugar was present in the urine (from three to four grains per ounce) but there was no polyuria. The boy's general condition had undergone great improvement during the administration of pituitary substance, which was commenced a month ago, two grains twice, and latterly thrice, daily. His headache was not now complained of and the thickening of the subcutaneous tissues had lessened.

Dr. FLEMING exhibited a girl, aged 18 years, who was admitted to hospital in April, 1902, suffering from Marked Compression Symptoms. Localising symptoms were almost absent but pointed most to the left arm centre. As she was evidently dying from compression (hydrocephalic cry, temperature running up, and pulse feeble and rapid) the skull was opened over the right motor area. The membranes bulged much but there was no evidence of tumour. On opening the meninges a large amount of cerebro-spinal fluid escaped. The patient rapidly improved and in two weeks regained consciousness and could use the left arm and leg. The wound healed, but there was a large bulging filled with cerebro-spinal fluid, and any attempt to apply pressure to this induced an exaggeration of the paralysis. At the time of operation there was slight optic neuritis but this soon passed off and her sight was now normal. During the past week the old wound had commenced to exude cerebro-spinal fluid. There was a tuberculous history on the father's side.

Dr. BRUCE showed a woman suffering mainly from Paralysis of the Right Serratus Magnus Muscle. She was delivered on Nov. 3rd, 1902, and two days later was seized with an intense pain over the right shoulder-joint so severe that she could not move the arm. There was loss of power in attempting to raise the arm above the shoulder. The right scapula became remarkably prominent when she held the arm forwards or upwards. There was a hollowing in both supra- and infra-spinous regions of the scapula showing that the nerves supplying these muscles were also affected.

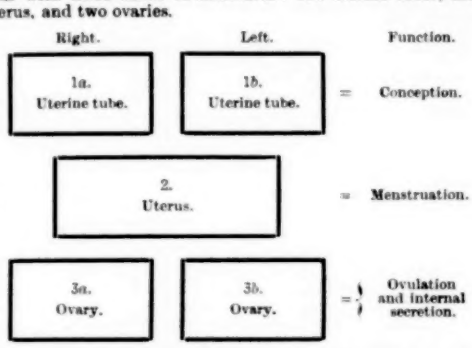
A most interesting list of exhibits was shown in the museum. The members and their friends dined at the Balmoral Hotel in the evening.

COMBINED MEETING OF THE GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY AND THE EDINBURGH OBSTETRICAL SOCIETY.

Indications for Particular Methods in Extirpating the Diseased Pelvic Viscera.

THE summer combined meeting of these societies was held on June 18th in Glasgow, Dr. J. NIGEL STARK, the President of the Glasgow Obstetrical and Gynæcological Society, being in the chair.

Dr. HOWARD A. KELLY (Baltimore), the honorary President of the Glasgow Obstetrical and Gynæcological Society, opened the discussion with a paper on the Indications for Particular Methods in Extirpating the Diseased Pelvic Viscera. He commenced by saying that the time had now arrived when they could safely take an inventory of the numerous operations performed within the last 25 years by various surgeons with the view of determining for each procedure its limitations and appropriate field. But in the present state of surgical practice, so radical in its action in this particular field, it was very necessary to consider the more important subject of conservatism. In a woman under 40 years of age every possible effort consistent with a reasonable expectation of restored health should be made to avoid the loss of structures of such great value to the economy as the pelvic viscera. While the removal of diseased tissues which could not be regenerated was a boon, the sacrifice of a sound organ must always be called by its proper name—a mutilation. It was in the very class of cases, continued Dr. Kelly, that they were about to consider that caution was required, as exsective surgery had in these done the most damage—he might almost say had run riot. It was in these inflammatory pelvic diseases especially that many ovaries were still being ruthlessly sacrificed when a judicious conservatism was capable of preserving their functions and when the kindly hand of time would with a little delay restore health without ablation. The ovaries as a rule were only innocently involved in the pelvic peritonitic process; they were often not a determining factor in the production of the disease but they owed their involvement simply to the misfortune of their anatomical position; they were often caught in the stream of pelvic peritonitis and so bound down by adhesions. A wise conservatism would often be content simply to release these adhesions and to raise the ovary out of its bed, or at most to remove a diseased uterine tube or tubes. Even if one ovary was diseased beyond repair the other might be saved and with it those functions which were so essential to the well-being and happiness of a normal woman. They had to deal with three kinds of structures: two uterine tubes, the uterus, and two ovaries.



The order of value to health and for function was 1, 2, 3; with all these organs present the patient preserved these four functions. Now the order of importance to health was from above down: if the top blocks were lifted from the

pile the possibility of conception was taken away, but menstruation, ovulation, and internal secretion were left. If the blocks 1 and block 2 were taken away the functions of ovulation and internal secretion were left. But if the operator went in the reverse direction and removed the lowest blocks 3 then the whole pile collapsed—that was to say, with the ablation of the ovarian function the remaining organs had no value. Dr. Kelly's rule for conservatism was therefore in the direction 1, 2, 3 and to save all he possibly could; in the direction 3, 2, 1, when 3*a* and 3*b* (both ovaries) were removed, he removed the rest as useless and often dangerous to health on account of infections, misplacements, and adhesions, as well as irregular hæmorrhages and discharges. For conservatism Dr. Kelly considered 1*a* or 1*b* and 3*a* or 3*b* almost as good as if both were preserved and he had conserved $1a + 2 + 3b$, $1b + 2 + 3b$, and $1b + 2 + 3a$, and in a case of the last instance a subsequent pregnancy had gone on to term. In passing on to the best methods of surgical treatment Dr. Kelly emphasised the necessity for individualisation of procedure. The method was to be used that would best simplify the operation in each case and one routine procedure was not to be adhered to. The various methods of enucleating the uterus and its adnexa might be classed in general under two heads—those which attacked the uterus or the broad ligaments from above and those which attacked the uterus from below. Under the first head they had:—1. The classical method of tying off first one broad ligament and then the other and then amputating and removing the uterus. 2. A newer method—viz., that of enucleation by tying off first one broad ligament, then amputating the uterus in its cervical portion; this exposed the opposite uterine artery, which was then caught and divided, and last of all the round ligament and ovarian artery of the same side were caught, tied, divided, and the uterus with the adnexa was removed. 3. By bisecting the body of the uterus from the fundus down into the cervix, which caused little bleeding, then a cut to the side divided one-half of the cervix and exposed the uterine vessels of that side. These were caught and the quadrant of the uterus thus liberated was pulled up and out, exposing successively the round ligament and the ovarian vessels which were clamped, and the uterus was removed. The opposite half of the body was next treated in the same way, thus removing all but the cervix uteri. Of the second group of operations there were two methods: one by Faure of Paris where the uterus was pulled up to expose the cervix posteriorly which was caught and completely divided with scissors, exposing both uterine vessels which were controlled at once; then by hooking the finger under each broad ligament and dragging it up, a clamp could be applied on each side and the uterus could be very quickly removed. This plan was to attack the uterus from the posterior aspect; the other was to do so from the anterior surface after pushing down the bladder and then following a similar procedure. A simple case might be treated indifferently by, say, the classical method. But one or other of the methods described would be of special advantage in difficult cases. Suppose a case in which there was a pelvic abscess with extensive bad adhesions on the right side. This would be made very much easier by commencing from above downwards on the left side, securing the vessels, then carrying the incision across the cervix, and working from below upwards. This plan gave a far better view of the difficult part of the operation, abundant room to work in on the right side, and would allow the adhesions to be attacked from below and from the front of the broad ligament as well as from above. All the diseased structures could be enucleated *en masse*. Suppose a case with abscesses and bad adhesions on both sides; both sides were difficult, so that the uterus was bisected from the fundus down into the cervix, which was incised horizontally to expose and to control the uterine artery. Each half was then enucleated from below upwards. Suppose a case where the body of the uterus was retroverted and bound down with extensive adhesions. The surgeon should commence by pushing down the bladder in front, then cut across the cervix horizontally to detach the uterine body; this exposed the uterine arteries which were then ligatured. The uterus could then be enucleated as a whole or bisected from below upwards and removed in halves. The same principles applied to the removal of fibroids of large or of small size, if necessary bisecting the tumour if it rendered the operation easier. By adopting one or other of these plans a difficult operation was often converted into one of the simplest category and thus the operation became less dangerous to the life of the patient.

Dr. D. BERRY HART considered Dr. Kelly's description of these matters the best answer to those operators who believed that the vaginal route was the better. By using the abdominal route everything could be carried through more safely and thoroughly. He expected that most men would not find these matters so easy as Dr. Kelly had described them, but the latter two methods were a great stride in advancing gynæcological surgery.

Dr. MURDOCH CAMERON considered that the address marked a great advancement over the whole procedure.

Dr. N. T. BREWIS wished to corroborate every word that had been spoken on conservatism in gynæcological surgery. Where both ovaries and tubes required to be removed it left the uterus with no useful function to perform and he did not hesitate to remove it also in these cases if its removal would render a difficult operation easier. His practice was to attack the hysterectomy from side to side, or failing that, down one side, across the cervix, and up the other side from below. He had found this method most useful in many cases.

Dr. J. K. KELLY alluded to the fact that the uterus might possibly have a mechanical function to perform in the pelvis and if not diseased he always inclined to leave it for this reason, even if both tubes and ovaries were removed. He agreed entirely with all that had been said in favour of conservatism and for this reason considered that the abdominal operation surpassed the vaginal.

Dr. F. W. N. HAULTAIN alluded to the benefit obtained in splitting the uterus in difficult cases. He would like a clear expression of opinion about conservatism of the different organs. Would Dr. Kelly remove the uterus in a simple case as an inert organ where both ovaries and tubes required undoubtedly to be removed? As regards the conservatism of the ovary he found great difficulty in knowing what was a healthy ovary. The question of what was a healthy ovary had yet to be settled.

Mr. A. E. MAYLARD considered the remarks on conservatism by such a great operator as Dr. Kelly as extremely weighty and valuable. Nothing had been said on the question of sepsis in these operations.

Dr. J. HAIG FERGUSON always removed the uterus, even if not diseased, when both ovaries had been removed. He had found the side-by-side method very useful—as, for example, in an extremely adherent extra-uterine gestation. Where there was a large raw surface and the bleeding was difficult to control the removal of the uterus helped very much. He regarded the vaginal route as preferable if the uterus only required to be removed but if other structures were inflamed he considered the abdominal route the better.

Dr. R. C. BUIST considered that the vaginal route had its proper place, but the cases required to be individualised for it. There was comparatively less shock in the vaginal operation. But if there were many adhesions or in severe inflammatory cases the abdominal route was the better. He believed that he had operated twice as often by the abdominal as the vaginal route, but the latter had its sphere.

Professor J. A. C. KYNOCH and the PRESIDENT also joined in the discussion.

Dr. HOWARD KELLY, in reply, stated that in some cases the vaginal operation was splendid for conservatism, as in a case with pelvic abscesses where the posterior cul-de-sac could be opened, the abscesses reached, and the cavities effectively drained. It was possible that an operator might begin an operation by the abdominal route and finish by the vaginal. As regards the ovaries, he had a very earnest belief that half of the cases which he had seen where the ovaries had been removed were unjustifiable. In an operation, if he found the ovaries markedly adherent but otherwise healthy, he released the adhesions and left the ovaries. Even if the patient was about 40 years of age, he would rather run the risk of requiring to operate a second time than remove the ovaries if he was doubtful of the necessity of doing so. As regards the risk of sepsis, he never split a cancerous uterus. There was very little risk of sepsis in cases of endometritis; he had made cultures in 50 cases and only got growth in one case. But where the cervix was cut across he packed with gauze all round first and immediately after the incision he cauterised the cervical canal with carbolic acid or the cautery and so prevented danger of infection. If in a double ovariotomy he found the uterus healthy, he left it in, but if

there were any difficulty and extensive adhesions, then he considered its removal necessary to facilitate the operation and the stump of the cervix was a mechanical help to the floor and the round ligaments could be stitched to it to hold it up.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.

THE eleventh meeting of this society was held on June 17th in the Lecture Theatre of the Royal Hospital for Sick Children, Edinburgh, and took the form of a clinical demonstration of disease in children. Professor Sir T. R. FRASER, F.R.S., the President, was in the chair.

Dr. G. H. MELVILLE DUNLOP showed: 1. A girl, aged 12 years, suffering from Achondroplasia. The patient was only 46 inches in height or corresponded to a child seven or eight years of age. Her development was slow, she being about three years of age before she could sit up and five years of age before she could stand. Only at the age of six or seven years did she begin to talk. Though it was not a perfectly typical example, yet the main features were present—the short, stunted limbs out of all proportion to the trunk, the lordosis, the lengthened appearance of the face, and the thickening of the skin being present. The condition began as a rule between the third and sixth month of intra-uterine life; all the bones which developed during this period were affected. The femora were markedly curved forwards and the gait was very waddling owing to the large size of the head of each femur and the relatively small size of the acetabular cavity. The frontal bones bulged out prominently and the palatal arch was high. The feet were broad, thickened, and stumpy. 2. A girl, aged eight years, with a Persistent Purpura of the type described by Werlhof. The disease commenced fully two and a half years ago and during this period she had been more or less constantly in the wards of the hospital. The patient appeared to be in perfect health when it was noticed that her body had become covered with petechiæ. These increased in size and two weeks from the onset of the trouble large subcutaneous hæmorrhages developed. At first these were most marked over the bony prominences but soon they began to develop at any locality. Blows or knocks at once produced such ecchymoses but apart from traumatism they appeared. The patient likewise suffered from severe epistaxis every two or three weeks and plugging the nares was the only method of stopping the flow. She also had from time to time severe bleeding from the gums. There was never any fever, however, and no swelling was ever detected in the joints. On examining the mouth a large hæmorrhage on the palatal roof was found and this remained permanently, as also did numerous petechiæ all over the gums, lips, and buccal mucous membrane. No treatment had been of any avail and Dr. Dunlop did not think it was a case of hæmophilia, but it had all the characters of purpura as described recently by Werlhof. 3. A case of Simple Basic Meningitis in an infant showing recovery. The child had been in the wards for several weeks and remained listless and apathetic. The head began to swell and the cerebro-spinal fluid removed by lumbar puncture showed the presence of the characteristic organism. Later, improvement commenced but the infant was perfectly blind. The blindness, however, in Dr. Dunlop's experience gradually disappeared in such cases.

MR. HAROLD J. STILES exhibited: 1. A girl after Excision of a Tuberculous Kidney (primary). The diagnosis before her admission was that of renal calculus imbedded in the ureter. This was made because the girl was suddenly seized in June, 1902, in the right lumbar region with very severe pain which shot downwards to the groin; she vomited and passed bloody urine. The pain lasted only about half an hour but the urinary symptoms persisted, the urine being cloudy, throwing down a deposit, and hæmaturia being frequent. The severe pain recurred two months later and again six weeks previously to the patient's admission to hospital. On examination in the ward the right kidney was easily palpable, was freely moveable, and appeared to be two or three times its normal size; its ureter, much thickened, could be felt running downwards and the painful micturition occurred about every half-hour. The left kidney was not enlarged. The diagnosis of primary tuberculosis of the right kidney was then made. The disease had spread to the ureter as well as to the bladder. The severe pain which had recurred on three occasions had been due most probably to a rupture of one of the abscesses into the pelvis of the kidney. As the freezing point of the blood was normal it was inferred that the left kidney was in functional activity. The right kidney was excised by a long oblique lumbo-iliac incision fully a month ago and the girl had made an excellent recovery. There were no adhesions and it was seen that several renal abscesses had burst into the pelvis of the kidney. In many cases the tuberculous condition of the bladder improved when the primary tuberculosis was removed and it was hoped that this would occur in this case. 2. A girl after Excision (transperitoneal) of a large Congenital Hydronephrosis. On admission the child's abdomen was seen to be greatly distended and a cystic tumour filling the whole abdomen with the exception of the left iliac fossa was made out. The tumour was elastic and gave a thrill when percussed. The diagnosis was made of either a large congenital cyst or more probably a hydronephrosis, as there was a distinct bulging in the right flank. No tympanitic note could be elicited over the colon. A mesial abdominal incision was made in order to clear up the diagnosis. On opening the abdomen the cyst wall was found to be entirely covered with peritoneum. The cyst was then tapped and pulled out of the wound. The openings of the renal calyces could then be seen. No difficulty in excising the sac was experienced. The ureter was contracted to the size of a whip-cord. A drainage-tube was left in for 48 hours and now three weeks after the operation the child was well. Mr. Stiles thought that in such cases the transperitoneal operation was better than that by the lumbar incision. 3. Several cases to illustrate various stages in the treatment of Congenital Dislocation of the Hip (single and double). 4. A child with Incontinence of Urine. There was a slight degree of hypospadias, the urethral orifice being situated halfway along the penis. A sound was found to pass in nearly up to the handle, showing that there was a patent condition of the urachus extending up to the umbilicus. 5. A girl who had been operated on some months ago for Cirsoid Aneurysm of the Scalp. It had been treated by ligature of the 12 feeding arteries and later by excision and dissection out of the tumour. At present there was hardly any perceptible pulsation. 6. Several cases showing the method of treating the wound after operation for the Radical Cure of Hernia in infants were demonstrated in the ward.

Dr. JOHN THOMSON exhibited: 1. A child, aged eight years, suffering from a Late Development of Rickets. The condition was very uncommon. The family history was not remarkable except that the mother had undergone treatment for mental disease. The child appeared to be healthy at birth and none of the symptoms of ordinary rickets appeared. The patient received breast milk for 18 months and began to run about when a year old and was thought to be perfectly healthy until 18 months ago. At this time the child was attacked by severe diarrhœa. There was no vomiting or blood in the stools. The diarrhœa persisted for about two months and then subsided. The child was then, however, unable to go about and had gradually become weaker, though the appetite had remained good. The child was very small and showed great muscular debility. The legs were not affected at all and the pelvis was but slightly, but the chest had undergone marked deformity; the chest was pigeon-shaped and the rosary was well marked. The bones of the right forearm were bent forwards, while those of the left were bent backwards. Though the clavicles appeared to be normal the scapulæ were very greatly deformed, the lower angle of each being bent upwards into a hook shape. The metacarpal bone of each thumb was greatly thickened and bent—a condition not present in ordinary rickets. The skiagram showed that there was a very great deficiency in the lime salts. The child's weight was only 22 pounds, or that proper to a child a year old. 2. A case of Head-nodding with Conjugate Nystagmus in a child aged four years. The condition of head-nodding with nystagmus was a fairly common condition met with in children. In such the nystagmus was usually small in range and very rapid. Another case which he had under observation in a child, aged nine months, was unique in that the movements were convergent. In the boy shown there was conjugate nystagmus with a tendency to fall backwards. There was probably some organic cerebral lesion.

Dr. CHARLES KENNEDY exhibited: 1. A case of Depressed

Fracture of the Frontal Bone in an infant due to pressure during delivery from the promontory of the sacrum, the mother's pelvis being flattened. 2. A case of Sterno-clavicular Dislocation in a child one month after birth.

Dr. HARRY RAINY demonstrated: 1. A case of Erb's Paralysis in which improvement was beginning through the application of electrical baths. 2. A child, four and a half years old, showing Cerebral Paralysis probably due to injury at birth. There were aphasia, weakness over the right side of the body, and distinct athetosis of the right hand. The prognosis as regards speech was fair. There was no mental impairment and the lesion was probably a basal hæmorrhage. 3. Two cases of Infantile Paralysis (spinal) to illustrate the effects of electrical treatment.

Mr. GEORGE L. CHIENE showed: 1. An infant, aged six and a half months, on whom Sigmoidostomy had been performed at birth for imperforate anus. At present the child was able to retain the fæces for a period of three hours. Care was taken to separate the muscles in their long axis and not to cut any fibres transversely. 2. A child, aged one and a half years, showing the results of a modification of the operation usually performed for tuberculous testicle with secondary involvement of the skin. The operation consisted in making a small incision over the external abdominal ring and ligaturing the cord. The scrotum was then opened by an elliptical incision below and the diseased testicle shelled out from below, the operation being easy and rapid. 3. A boy showing the results of a Plastic Operation for Contracture of the Fingers and Palm of the Hand following a Burn. 4. A child with tuberculous disease of the metacarpal bones to illustrate the beneficial effects of rest alone, the hand being fixed to a splint and kept immobile by sticking-plaster.

Dr. T. M. BURN-MURDOCH had a case of Multiple Fractures in an infant who suffered from rickets which in his absence was demonstrated by Dr. DUNLOP.

The following card specimens were shown:—

Mr. STILES: (1) Tuberculous Kidney; (2) large Congenital Hydronephrosis; (3) portions of the Long Bones resected for Tuberculous Osteo-myelitis (with Skiagram by Dr. Rainy); and (4) Dissection of the Roof of the Fourth Ventricle in a case of Hydrocephalus following Radical Cure of Spina Bifida.

Dr. DUNLOP: (1) Knee-joint from a case of Syphilitic Arthritis (with skiagrams by Dr. Rainy); (2) Liver from a case of Congenital Obliteration of the Bile-ducts; and (3) Brain from a case of Simple Basic Meningitis showing Cystic Outgrowth from the Ventricle caused by pressure of ventricular fluid.

Dr. RAINY: Various specimens of X-Ray Work.

Mr. CHIENE: (1) Tuberculous Testicle from case shown; (2) Gangrenous Appendix from a case of General Peritonitis; and (3) Intestines from a case of General Peritonitis following an injury to the abdomen.

Dr. THOMSON: (1) Specimen and Photograph from a case of Congenital Hypertrophy of the Pylorus which died without being operated on; (2) Specimen and Photograph from a case of Sporadic Cretinism; and (3) Specimen and Photograph from a case of Congenital Laryngeal Stridor.

Dr. STUART MCDONALD: (1) Specimens illustrating Posterior Basal Meningitis; (2) Gangrene of the Lung following Septic Infarction; (3) Gangrene of the Lung following Simple Broncho-pneumonia; (4) Gangrene of the Lung following Tuberculous Broncho-pneumonia; (5) Pericarditis in Pyæmia; (6) Heart with Patent Ductus Arteriosus; (7) Liver showing Pyæmic Deposits in a case of Pylephlebitis; (8) Kidney showing Hæmorrhagic Infarction from Thrombosis of the Renal Vein; (9) Kidneys and Heart from a case of Lymphatic Leukæmia; (10) Tuberculous Peritonitis; (11) Cerebral Hæmorrhage from Injury during a Normal Parturition; and (12) Embolism of the Middle Cerebral Artery in a case of Acute Rheumatism.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on June 20th at the Alexandra Hospital for Sick Children, Brighton, Dr. Wayland C. Chaffey being in the chair.—Mr. A. H. Tubby read a paper entitled: "Is the Urban Hospital Treatment of External or Surgical Tuberculosis Justifiable." He had examined the statistics of four hospitals for children's diseases in London in order to see whether the results of operations on tuberculous joints or of glands in the neck were satisfactory. Out of 218 cases 68 patients were cured, 128 were relieved, nine died in hospital, and in the remaining 13 the result was unknown. It was pointed out, however, that the word "relieved" was of doubtful significance and when applied to tuberculous affections meant little or nothing. It was suggested that tuberculous children should not be treated in London hospitals but in properly equipped establishments in the country or at the seaside.—Mr. R. Clement Lucas and Dr. A. E. Sansom commented upon the paper and Mr. Tubby replied.—Mr. Clinton T. Dent said that the issue raised was of such importance that he thought that a subcommittee should be appointed to consider the matter.—Mr. F. Jaffrey seconded the proposal and the following gentlemen were appointed to serve on the subcommittee: Mr. Dent, Dr. Dawson Williams, Mr. Sydney Stephenson, Mr. Jaffrey, and Mr. Tubby.—Mr. Clement Lucas read a paper upon the Removal of a Tin Mouth-organ from the Small Intestine of a child aged three years. The chief interest lay, perhaps, in its localisation by means of skiagraphy. In this case the metal body was situated in the upper part of the jejunum. Mr. Lucas compared the various features presented in this case with those of another case which he had brought before the society in which a large nail had been situated in the second part of the duodenum.—Mr. Dent referred to an interesting case under his own care that had given rise to some difficulty.—Dr. Edmund Hobhouse read a paper upon the Functions of Children's Hospitals. He spoke of the out-patient work connected with children's diseases at the hospital to which he was attached as the most interesting and important part of his medical life.—Mr. R. H. Parry read a paper upon Enlarged Cervical Glands removed through an Incision in the Hairy Scalp. He had operated in this way upon 20 cases (photographs were shown).—Mr. Lucas, Mr. Morgan, and Mr. Tubby commented upon the method.—Dr. George Carpenter read a paper upon Nephritis in a Syphilitic Infant.—Dr. Edmund Cautley commented upon the paper.—Dr. Carpenter read a paper upon Splenomegaly in Infants in which an analysis of 348 cases had been made. In the majority of the cases either syphilis or rickets was present, 66 only being free from evidence of those two diseases.—Dr. Cautley then read a paper upon a case of Primary Pneumococcic Meningitis. The child presented symptoms of meningitis but no physical signs in the lungs. A diplococcus was obtained in cerebro-spinal fluid drawn off by lumbar puncture. The child recovered but died afterwards from diphtheria in one of the fever hospitals. Unfortunately a necropsy could not be obtained.—Dr. Theodore Fisher had known diplococci to be present in cerebro-spinal fluid although no meningitis was present.—Dr. George A. Sutherland asked if there was any suspicion of the presence of pus in the middle ears.—Dr. Cautley said that there was no evidence of ear trouble.—Dr. Alexander Morison read a paper upon the Use of Opium in the Carditis of Children.—Brief summaries of three other papers were read. The first was by Dr. Fisher upon Dilatation of the Bronchial Tubes after Measles; the second by Dr. Eldon Pratt upon an Obscure Case of Cerebral Tumour which for a time became quiescent; and the third by Mr. Stephenson upon a condition of the Optic Papilla likely to be mistaken for Optic Neuritis. (Beautiful drawings of the condition in the last case were passed round).—In the evening the members of the society dined at the Grand Hotel, Brighton, and on the following day Dr. Chaffey entertained them to lunch at the Hôtel Métropole.

A MEDICAL EXPRESSION OF GRATITUDE TO THE KHEDIVE.—Delegates from the British committee of the Egyptian Medical Congress, which was opened by the Khedive on Dec. 19th last in Cairo, have just been received by the Khedive at Sir Ernest Cassel's residence in London. The President of the committee (Sir Frederick Treves) expressed the deep sense of gratitude which the medical profession in this country felt to His Highness for his patronage and active support of those who participated in the congress and further thanked His Highness, in the name of the committee, for the enlightened support and encouragement which he gave to all medical and scientific matters in Egypt. The Khedive thanked the deputation and said he was convinced of the enormous advantages derived by Egypt in recent years from medical work, and he particularly appreciated the hard and successful work in stamping out plague and cholera performed by the British medical men in Egypt. His Highness added that the *fellaheen* now really welcomed purified water-supplies, disinfectants, and hygienic measures.

Reviews and Notices of Books.

Manual of Practical Anatomy. By D. J. CUNNINGHAM, M.D. Edin., Professor of Anatomy, Edinburgh University. Vol. I., Upper Limb, Lower Limb, and Abdomen. Third edition, illustrated with 205 Engravings, many in colours. London and Edinburgh: Young J. Pentland. 1903. Pp. 605. Price 10*s.* 6*d.* net.

THE claim that this is a thoroughly revised edition is fully borne out by a perusal of the work. Professor Cunningham's Manual is perhaps the most popular of its kind with students and unlike some others is always pleasant reading, since its careful arrangement calls for but little cross reference on the part of the dissector. Each edition has been an advance on its predecessor and the present issue is quite up to date. In fact, while it still retains its characteristic features of lucidity and conciseness of description, it has been so extensively revised as to form what is practically a new book. By judicious pruning and condensation the author has succeeded in incorporating a mass of new information regarding the abdominal and pelvic viscera without materially adding to the size of the volume.

The first section is devoted to the upper limb. We notice here that the description of the mammary gland has been re-written and stress is laid upon the extension of gland tissue into the axilla. In the account of the brachial plexus the roots from which the different nerve trunks are derived are now numerically indicated. The three gleno-humeral bands of the shoulder-joint are now mentioned. The dissection of the lower limb and that of the abdomen follow in order and it is in connexion with the latter that the greatest alterations have been made. The author has availed himself to the utmost of all recent work on the subject of the viscera and the result is an extremely practical and up-to date account of the configurations and relations of the viscera of the abdomen and pelvis. To mention only a few of many new features, we find mention of the stomach-bed as described by Professor A. Birmingham; attention is drawn to the fact that the empty stomach is probably an actively contracted muscular tube and not a flaccid bag. Professor C. Addison's transpyloric line is accepted as probably the best guide to the position of the pylorus. Turning to the spleen, the probable effect of varying conditions of the stomach and intestines in modifying its shape is indicated and so the two forms met with are accounted for. Jonnesco's description of the pelvic and iliac colons is adopted, the former corresponding to the upper part of the sigmoid flexure and the latter to the remainder of the flexure and the first stage of the rectum as ordinarily described. The urinary bladder receives attention in both its contracted tetrahedral and distended ovoid forms and the corresponding differences in its lateral as well as its anterior relations are brought out. The vertical position is accepted for the ovary in the virgin and the ovarian fossa is described and figured.

Striking as are the changes in the descriptive portion of the book, those in the illustrations are even more marked. In fact, nearly all the illustrations are new and admirably adapted for their purpose. Some are from the larger Text-book of Anatomy recently published by the same author, many are quite original, and a few are borrowed from other sources. We particularly welcome the illustrations of the bones showing the areas of muscular attachment in colours; these should be valuable in the dissecting room and appear to be very accurate. The illustrations of the cutaneous nerves are a great advance on those in the former editions. The section dealing with the viscera is profusely illustrated, largely from formalin preparations. In the diagrams of the nerve plexuses, which are new, the posterior derivatives of the plexus are distinguished by colour from the anterior. We are glad to see a reproduction of Max Brödel's figure illustrating the distribution of the larger arterial branches in the kidney, for this is a matter of surgical importance.

There are three illustrations which call for some comment. Fig. 35 appears to give an erroneous idea of the relation o the ulnar nerve at the wrist to the pisiform and the unciform bones. Fig. 69, after Professor A. M. Paterson, showing the distribution of the obturator nerve, remains more or less of a puzzle. Why does not the author say which thigh it represents? And Fig. 169 is a constant pitfall to students beginning the study of the pelvic fascia owing to the faintness of the guiding lines which do not quite reach the structure which they should indicate. The latter may seem a trivial objection but in practical experience it is a real one. The sections in small print on hernia are, as before, admirable. The book still appears in its former garb; it is well printed and not too large or too heavy. We predict that it will long remain the favourite dissecting-room manual and we congratulate Professor Cunningham and his assistants on the improvements which they have made in this edition.

A Class Book of Botany. By G. P. MUDGE, A.R.C.Sc. Lond., F.Z.S., and ARTHUR J. MASLEN, F.L.S. London: Edward Arnold. 1903 Pp. xvi.–512. Price 7*s.* 6*d.*

THE object of the authors in writing this book has been to supply a single work which will prove sufficient for the requirements of students preparing for the Intermediate Scientific B.Sc. and Preliminary Scientific M.B. examinations of the University of London, or for the advanced stage of the Board of Education and similar examinations. Also it may be learnt from the preface that "while both authors accept their responsibility for the correctness and arrangement of the work as a whole, Mr. Mudge is mainly responsible for the preparation of Part I. ..... and Mr. Maslen for the remainder."

The work is divided into four parts dealing respectively with—(1) the structure and development of various types; (2) special morphology and classification of Angiosperms; (3) physiology; and (4) the technical description of plants and definitions of terms.

Dealing first with Part I. we find the usual types are taken and that the ground covered is sufficient. The facts, on the whole, are correct and clearly set forth. There is, however, one important fault which mars this portion of the book in particular—that is, in many instances it is not up to date, advantage not having been taken of the results of recent research. A few examples will make this clear. During recent years much attention has been given by various botanists—too numerous to mention here—to the vascular system of ferns and Angiosperms and to the examination of the stelar theory. The result of this work is that van Tieghem's hypothesis has either been entirely thrown over or accepted with modifications. Notwithstanding this, it is found that those portions of the volume before us dealing with the stele are treated in much the same way as might have been done before the stelar theory was seriously examined. Again, in the description of fertilisation in the Angiosperms, no mention is made of the most important discoveries of Nawaschin, Guignard, and others. We, of course, refer to the fusion of the second generative nucleus of the pollen-tube with the polar nuclei of the embryo-sac to form the endosperm nucleus, which process has now been observed in a large number of natural orders and may be considered as general. And, probably as a consequence of this omission, no mention is found regarding the recent views, held by many, of the homologies of the embryo-sac.

Part II., dealing with special morphology and classification of the flowering plants, is on the whole satisfactory. We may suggest, however, that it would have been better

to substitute the terms "bostryx" and "cincinnus" for helicoid and scorpioid in the portion dealing with cymose inflorescences, on account of the confusion which has hitherto existed in some quarters regarding the last two terms. Further, it is a matter for surprise to find that the differences in the relative positions of the carpels in the Solanaceæ and Scrophulariaceæ are not given, notwithstanding the fact that in many cases the dissimilarity in this feature is the only macroscopic one to be relied upon.

The physiological section (Part III.) is treated experimentally and contains all that is required. The experiments are generally well chosen, but the apparatus (Fig. 219) to demonstrate transpiration might well have been improved upon. Another point in this section illustrates the length of time it takes to eliminate an erroneous idea from text-books. Prior to 1898 it was unanimously accepted that *Lathræa squamaria* besides being a parasite was also a carnivorous plant, capturing small animals by means of the hollow subterranean scale-leaves. It has been conclusively shown by Groom and Haberlandt that this carnivorous habit does not obtain in the plant in question, and that quite a different function is to be assigned to the hollow scale-leaves. However, on p. 427 we find the old story once more set forth.

In conclusion, we are of the opinion that, although the work contains much that is good, it cannot be considered first rate, chiefly on account of the authors' failure in being up to date. In the hands of a capable teacher, who besides instructing keeps himself *au courant* with his subject, the book may be useful.

Anatomy: A Manual for Students and Practitioners. By W. H. ROCKWELL, Jun., M.D., formerly Assistant Demonstrator of Anatomy in the College of Physicians and Surgeons, Columbia University, New York. London: Henry Kimpton. 1903. Pp. 620, with 70 engravings. Price 10*s.* net.

THE author frankly admits in the preface to this volume that Gray's Anatomy has been followed as closely as possible both in order and description. The treatise has suffered, as was inevitable, in the process of condensation and the present work appears lifeless as compared with the original. The *raison d'être* of the present volume is hard to divine. It is described as a text-book for students and practitioners and intended to be useful not only for the review of work but also for the general study of anatomy when minutiæ are deemed unessential. We are sure that the beginner who attempts to get up his work from the condensed pabulum here provided will never become enthusiastic in the pursuit of anatomy, whilst the practitioner who may refer to it will probably stand in need of some detail which either it does not furnish or mentions in too brief a manner to be of any practical use. Condensed anatomy is always a mere skeleton—lifeless and wearying. Such a high standard as the work of Gray having been taken as the basis of the book it is only to be expected that the facts are correct and the descriptions accurate and lucid. So far as we have tested the book these conditions are fulfilled, but we still find that the normal stomach is credited with a capacity of five pints and that the ureter is 15 inches long. It seems a pity that so much space is given to muscular anomalies, many of which are decidedly rare. The book is but scantily illustrated, most of the blocks having been obtained from the same source as the basis of the text. It is not easy to say on what principle the illustrations have been selected. Of the bones, some vertebræ, the sacrum, the coccyx, a couple of ribs, the clavicle, the hand and the foot, the patella and the os innominatum are all that appear. There are a few pictures of ligaments, none of muscles and vessels. The liver, the spleen, and one kidney are the only abdominal viscera delineated. A few illustrations of parts of the brain appear. This is certainly a very odd selection and is very difficult to account for. The book is clearly printed and well bound but decidedly heavy.

LIBRARY TABLE.

Annuaire des Eaux Minérales. Par Dr. G. MORICE. Paris: Libraire Maloine. 1903. Pp. 351. Price 1 fr. 50c.—This is the edition for the year of a guide-book compiled annually by Dr. Morice, editor of *La Gazette des Eaux*, dealing with the balneological stations of France with some detail and with those of the rest of the world with great brevity. The information is given under the heading of the various baths, alphabetically arranged, and is of a sort that should be practically useful. A chemical analysis of the water is followed in each case by a list of the conditions for which its exhibition is useful and information concerning the railway journey to the place. "Harrowgate" and "Matloch" are not good examples of how to spell English, while of one spa in this country which obtains mention we never heard and with regard to another we are very doubtful if it exists, but the guide-book clearly deals much more accurately and fully with French spas than with those of other nations.

Experiments upon Animals. By STEPHEN PAGET, with an Introduction by Lord LISTER. London: John Murray. 1903. Pp. xvi.—387. Price 6*s.*—This admirable book is a volume of the Progressive Science Series and is written in a plain, simple, categorical style. To try to convince the fanatic of the Coleridge type is but lost labour, but the catena of facts and figures which Mr. Paget has linked together cannot help having an effect upon anyone who is willing to approach the consideration of the subject with an open mind. The scheme of the book is as follows. First of all, experiments in physiology are noted and then experiments in pathology, materia medica, and therapeutics are considered. Out of all these experiments the great house of medical knowledge has been built up. That house is as yet far from complete, many of its rooms are practically empty, and Mr. Paget does not scruple to point out those departments in which up to the present knowledge gained by experiments upon animals has not brought success in the treatment of disease. Thus, he allows that tetanus antitoxin used for cure has but little action, although most valuable as a prophylactic. Typhoid antitoxin is still on its trial, though the results gained are decidedly hopeful, and plague serum, though not very curative, is certainly of value as a preventive. The book is a most valuable compilation and Mr. Paget deserves every credit for his labours.

Hampshire Days. By W. H. HUDSON. London: Longmans. 1903. Price 10*s.* 6*d.*—This is a perfectly charming book and one worthy to be kept and to be read together with White's "Selborne," "The Complete Angler," Kingsley's "Prose Idylls," and that delightful book "A Cotswold Village." Mr. Hudson writes about birds and beasts, insects and plants, old-world villages and customs in a style which even brings the country into the Strand. The New Forest is one of the few bits of wilderness left and it is by no means preserved as it should be. We are glad to see that Mr. Hudson hopes for nothing but good for the Forest from the advent of the motor-car and the motor-bicycle. "The desire will grow," he says, "that it shall not be spoilt either by the authorities or the residents, that it shall not be turned into townships and plantations, nor be starved, nor its wild life left to be taken and destroyed by anyone and everyone." We only hope that he is right. In our opinion the New Forest should be made a national property as the Yellowstone Park has been by the Americans in which the fauna and the flora should be strictly preserved. Even now it is primitive and many readers will perhaps confess to a

wholly unorthodox and unscientific sympathy for the old lady who says on page 330, after comparing modern pork and bacon with that of her youth, "But you can't keep a pig now—oh dear no! You don't have him more'n a day or two before the sanitary man looks in. He say he were passing and felt a sort of smell about—would you mind letting him come in just to have a sniff round? He expects it might be a pig you've got. In my time we didn't think a pig's smell hurt nobody. They've got their own smell pigs have, same as dogs and everything else. But we've got very pertickler about smells now."

A Brief History of the Hughli District. By Lieutenant-Colonel D. G. CRAWFORD, M.B. Edin., I.M.S., Civil Surgeon, Hughli. Calcutta: Bengal Secretariat Press. 1903. Pp. 81. Price 1*s.* 10*d.*—This work is a chapter which was written for the "Hughli Medical Gazetteer." It was considered so valuable historically that the Government of India decided that it should be published separately, and in addition it was considered beyond the scope of a medical account of Hughli. From a historical and national point of view the work is of great interest and the accounts of the struggles between the British, the French, and the Dutch for the empire of the East are well worth studying. A section of the book deals with folk lore and with the various deities who are worshipped to obtain immunity from, or cure of, various diseases. The "images" of many of these deities are primitive in the extreme, being merely a lump of cow-dung or a block of stone. One deity, Gobind-raj-ji, is invoked by milkmen and "though ordinarily benevolent it is said that he would kill any one who supplied adulterated milk for his worship." It is to be hoped that the deity in question extends his objection to adulterated milk being supplied to his devotees' customers.

Transactions of the Therapeutical Society, 1903. London: Wertheimer, Lea, and Co. Pp. 39.—The first issue of the *Transactions* of this new society is very slim and includes contributions which have already appeared in our columns. We published, for example, Dr. Nestor I. C. Tirard's paper on Some Dangers of Hypnotics and Mr. Peyton T. B. Beale's note upon Velvril Film, a cellulose derivative, as a hermetic seal for wounds. The published transactions also include a paper by Dr. J. Gordon Sharp on two Alstonia barks as additions to our list of tonics.

New Inventions.

CLINICAL CASE FOR BLOOD FILM WORK, ETC.

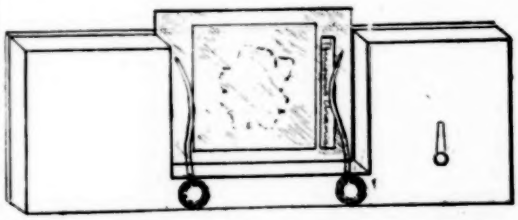
THE accompanying illustration (Fig. 1) represents a plated metal box 3¾ inches by 3¾ inches by 1¼ inches which was made for me by Mr. C. Baker, 244, High Holborn, London, W.C. It is divided into partitions which contain all the requisites for staining blood, sputum, &c., and will, I think, prove useful to those who make a study of the blood, &c., a routine practice. The contents are as follows: glass slides one inch by three inches (this space will hold two aluminium frames to be used instead of glass slides); glass bottle with indiarubber bung, to hold two sizes of cover-glasses; two glass-stoppered bottles for staining fluid—e.g., carbol-fuchsin and Jenner's stain; one stoppered bottle for alcohol and one measure glass, grad. c.c.; pipette, vaseline, brush, &c.; cover-glasses when spread with blood, &c., ready for staining; "soloids" of various staining powders; tissue paper for blood spreads; pestle, mortar, and funnel; hollow lid for forceps, filtering paper, needles, linen, &c.; hinged ring, which can be thrown out to receive a glass filter or a small bottle; and spirit lamp and watch glasses and stand for use in heating stains.

The same firm has also made for me an aluminium frame, the object of which is to obviate the necessity of carrying a large number of the usual three inches by one inch slides (*vide* Fig. 2). The frame is 76 millimetres by 26 millimetres (three inches by one inch) with an opening of 33 millimetres by 24 millimetres. A glass slide 76 millimetres by 26 millimetres is attached to the under surface of the frame by means of screws. There are two springs in the opening for holding a large cover-glass 32 millimetres by 24 millimetres firmly to the glass slide and also a small spring on the frame for securing a provisional label. To prepare the frame for

FIG. 1.

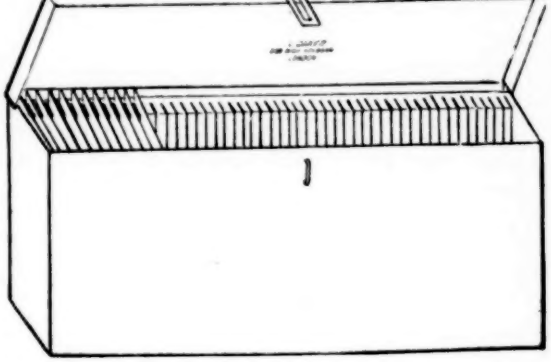
use a cover 32 millimetres by 24 millimetres is laid on the glass slide beneath the two springs; the specimen, on a smaller cover, is placed on the centre of the larger one and is then ready for examination. For specimens which are to be stained the blood can be spread on either cover, but for wet ones requiring immediate examination the smaller cover should receive the drop of blood. The glass slide beneath the frame is made of the best white plate-glass and will with

FIG. 2.



ordinary care need but an occasional renewal. The two sizes of covers with the frame are the only apparatus required for all ordinary clinical work, the frame rendering the carrying of slides quite unnecessary. Should the frame be wanted for use with lamp-light a blue-tinted slip can be inserted in place of the white one without trouble or loss of

FIG. 3.



time. When ordering the frame from the makers it should be stated whether this extra slip is needed. It is believed that this frame will be a help to many, especially to those who are obliged either from choice or duty to travel longer or shorter distances and with whom every ounce is a consideration, not to mention the deterioration of glass slides. To such a packet of covers will be all that is required. I should mention that the dimensions of the "opening" can be made to fit any cover-glass, provided the size required is given at the time of ordering. Another advantage is that the storing or preservation of specimens requires but an infinitesimal amount of space compared with the ordinary three inches by one inch slides and the great difference of weight is also in favour of covers and frame. 50 specimens, when covers are used, can be packed away in a box measuring three inches by one inch (Fig. 3). This box, also made for me by Mr. Baker, is of aluminium and remarkably light. The illustration shows projecting teeth, between which the specimens are placed end-ways. On the larger of the two covers sufficient space will be found for a permanent label. The frame and boxes being of metal no danger of warping or breakage need be feared, two strong recommendations to those working in the tropics.

Limpsfield. EDWARD HORDER, F.R.C.S. Edin.

A NEW SURGICAL BAG.

THE surgical bag, as shown in the accompanying illustration, I designed with the view of being able to go out at short notice to do any operation in private in a thoroughly aseptic and antiseptic manner. The frame is strongly made and covered with closely woven strong brown canvas lined with "selvyt." The dimensions are 30 inches by 20 inches by 9 inches. The shape of the bag, that of a dressing case, allows of the whole contents being seen at a glance when the lid is thrown back. The contents are as follows. 1. An instrument steriliser of the ordinary pattern except that I have designed the lid with a flange, under which a ring of thick round solid indiarubber fits tightly, half its circumference lying in a groove. This lid is also fitted with clasps by which it is clamped down on to the body of the steriliser, which is thus rendered watertight by the

pressure on the rubber. This, to my mind, is a great advantage, as the instruments can be sterilised before leaving home, the superfluous water emptied out, and none of the rest will leak into the bag during transit. The rubber must be removed before applying the burner and replaced afterwards; this is a simple matter, as being made smaller than the circumference of the lid it can be sprung into or out of the groove. 2. An oblong but deeper receptacle, fitted with folding legs and a similar lid, in the bottom of which lies a nest of five bowls of nickel-plated tin. These are utilised as bowls for lotions, &c. Inside the smallest and over the nest of bowls is space for from six to eight towels, flat sponges, &c. The lids of both boilers are designed also for instrument trays. All sponges, bowls, towels, ligatures, instruments, and instrument-trays can thus be readily sterilised. 3. A receptacle for dressings, bandages, aprons, &c. The dressings I use are those supplied by Messrs. Maw, Son, and Sons, of 7, Aldersgate-street, London, E.C., sterilised dry and packed in waxed paper. The lid of this vessel can also be used as an instrument tray. These three articles are made of nickel-plated copper. The other contents consist of scalpel box, needle case, infusion apparatus, hypodermic syringe, tube and rubber funnel for abdominal or other irrigation, ligature case, and various bottles in metal cases which can be filled to suit individual taste. My own contain chloroform, ether, methylated spirit, pure carbolic acid, adrenalin, strychnine, and morphia. There are also wide-necked bottles for salt, vaseline, tabloids, carrying specimens of a growth, &c. Ample space is left in which to pack rolls of instruments, Clover's crutch, or any of the other numerous etceteras which may be required for individual cases. Great trouble has been taken in the manufacture of this bag by Messrs. Maw, Son, and Sons, and I can only say that the workmanship and finish are most excellent and that the whole design has been carried out entirely to my satisfaction.

ARTHUR H. BUCK, F.R.C.S. Edin.,
Brighton. Assistant Surgeon to the Sussex County Hospital, &c.

Looking Back.

FROM
THE LANCET, *SATURDAY*, JULY 2, 1825.

FOREIGN DEPARTMENT.

ANALYSIS OF FOREIGN MEDICAL JOURNALS.
ARCHIVES GENERALES.

Operation for Closing the Cleft Palate.

WHEN we consider the great inconveniences which a defective formation of the palate must occasion by impeding the process of deglutition, and by giving to the voice a harsh, nasal, and almost unintelligible sound, any operation capable of removing such annoyances must be deemed a valuable acquisition to surgery. To M. ROUX, undoubtedly, belongs the merit of having introduced this simple but useful operation, and since he first performed it on Mr. Stevenson, in September 1819, several other surgeons have followed his example. It has been performed in England by Mr. Alcock, by Mr. Brodie, and others. M. Jousselin, an expert dentist at Liege, has lately performed it twice with perfect success, and M. Caillot, at Strasburg, has been equally fortunate.

Mr. GRAEFE, of Berlin, has laid claim to the priority of invention, and has accused M. ROUX, rather roughly, of having imitated his operation without acknowledgment.* But as far as we can discover, Mr. Graefe's ideas respecting the matter were very indistinct, and the attempt which he made to procure a union of the parts was completely unsuccessful.

The case of Mr. Stevenson is related at considerable length, and as it contains the principal observations to be made on the operation, we shall give an extended account[1] of it. Six other cases are added, in which the operation was performed for the simple division of the palate; four of these were successful, but the two others were otherwise, on account of some imprudences indulged in by the patients. These cases were published in a work which M.R. has lately written on the subject.** He calls the operation *Staphyloraphy*, which may now be considered one of the established operations of surgery.

Speaking of the difficulties of treating the case, M.R. observes, "a few years since it was looked on as beyond the reach of art, at least we are certain that no remedy had ever been discovered for it. A method has now, however, been found out for obviating this congenital division of the palate, and observation and experience have shown, that by an operation this membranous division can be restored to its natural state, and rendered competent to perform the functions to which it is destined, just as if no alteration had previously existed. Five years and a half have now elapsed since it was first performed, and nothing but a wish to confirm its utility by experience has prevented the more early appearance of this work."

* Mr. Graefe says, that some students, who had finished their studies at Berlin, went afterwards to Paris, and while there informed M. Roux of what had been attempted in Berlin. To this assertion M. R replies with some warmth; he says, "Je declare, sur l'honneur, que jamais rien ne s'etait offert à ma pensée, et que je n'avais reçu non plus aucune inspiration etrangere relativement a la suture des voile du palais, lorsque je fus conduit a entreprendre cette operation sur le jeune medecin du Canada." (Mr. Stevenson.)

** Memoire sur la Staphyloraphie, ou la suture du voile du palais; par J. P. Roux, Prof. à la Faculte de Medecine de Paris, &c. Memoire lu à la Section de Chirurgie de l'Academie Royale de Medecine dans la seance publique de 1824.

1 The account of the case, which occupies five columns of THE LANCET, has not been transcribed.

THE LANCET.

LONDON: SATURDAY, JULY 4, 1903.

Medical Relief.

How best to provide suitable assistance for the indigent during sickness is a matter which gives rise to perennial discussion on the part of those concerned with the administration of the Poor-law and attention may be profitably directed to some recent attempts to solve the problem. Where, in consequence of insufficient accommodation at the workhouse infirmary or the unwillingness of the sick to accept the hospitality of that institution a large number of cases have to be treated in their own homes, considerable expense must be incurred for out-relief. The Ecclesall Bierlow guardians have been trying to keep down the charges under this head by appointing outdoor nurses instead of making additions to the medical staff and have found that the experiment is not an unqualified success. This is hardly to be wondered at. The conception of the respective duties of medical officer and nurse upon which the scheme was based is fundamentally erroneous and it is not a matter for surprise that the medical men cannot find cases which may properly be handed over to the care of unqualified medical practitioners, however well meaning these latter may be.

At a conference of the guardians of the South Midland district held at Oxford recently Mr. H. G. WILLINK read a paper on the subject of the relations between relief committees and outdoor paupers in which he advocated the giving of orders for medical attendance in the form of loans and suggested that relieving officers should be encouraged by means of a commission on the amount collected by them to exact such payment as the recipients of orders were competent to make. We doubt whether this plan is much more feasible than the one already mentioned. It is true that under Section 16 of the Poor-law Amendment Act, 1849, a board of guardians may recoup itself out of property belonging to those who become chargeable to the rates, but the person who, being able to pay for advice, prefers to get it for nothing from the district medical officer does not need to be reminded that in so doing he saddles himself with certain responsibilities. He knows this perfectly well and would be the last person to let the consideration prompt him to truthfulness as to his financial position. The only persons to be affected by such misdirected efforts on the part of relieving officers would be those to whom is still left some shred of self-respect and whose interests, it may be supposed, it is the chief duty of guardians of the poor to conserve. The opinion was expressed by a gentleman who took part in the discussion on Mr. WILLINK'S paper that the request for relief was ceasing to be regarded by the necessitous as conferring any stigma upon them and this is to a great extent true. If it merely indicated that the common sense of the community was at last awakening to the fact that there can be no disgrace in a man's taking advantage of the facilities provided by his more fortunate brethren to enable him to regain that position as a useful member of society from which he has been displaced by ill-health there would be in it only matter for congratulation. But the correct interpretation is very different. We have rather to recognise that there is something radically wrong with our methods of attempting to render effective the altruistic principles which animate us and which, it is no exaggeration to say, are not displayed by any other nation.

It cannot be too strongly impressed upon those who contribute to the poor-rate that there has grown up, especially in large towns, a class of professional paupers towards whose misdeeds the law as at present administered is far too lenient. These people through long experience of the workhouse and its adjuncts know thoroughly the limitations of the powers of officials in so far as these affect the delights of living at someone else's expense. Anyone with practical experience of the class can call to mind innumerable instances of the abuses for which the present system supplies only very inadequate remedies. The vagabond who has drunk himself into a condition of hepatic cirrhosis makes of the workhouse—where of course he does no work—a temporary home while he gathers strength for a fresh debauch; the hulking scoundrel who cultivates an ulcer of the leg as an excuse for spending his life in bed in the comfortable ward of the infirmary where, strong in the security afforded by popular sentimentality, he lies grumbling at the food supplied to him and using foul language to the nurses who have to attend upon him; the woman of ill-fame who employs her temporary indisposition in recruiting for her nefarious trade: these are the people over whom a hysterical generation weeps while it has neither eyes nor ears for the quietly borne sorrows of the real children of adversity. This is not a new story. The pity is that it should be so true. Until the practice of charity is put upon a scientific basis, so that the exact political bearing of the steps taken to alleviate life's miseries can be appreciated, no great reformation is to be expected, but still something can be done with the defective machinery available. What is, perhaps, most urgently called for is an improved classification of paupers. The "foolish pride" which prevents old people of respectable antecedents from enjoying the peaceful seclusion of the workhouse is often simply a lively and quite justifiable apprehension as to the nature of the society which they will meet there. It is, at all events, possible for guardians by careful investigation into the cases brought to their notice to limit the number of calls by the undeserving upon the funds at their disposal, and it has been shown at Bradford that if the work of the relief committee is not carried out in a perfunctory way much can be done to prevent abuses. Working in conjunction with the Charity Organisation Society the Bradford guardians have succeeded in considerably reducing the number of persons in receipt of outdoor relief, medical or other, so that the town presents the unusual spectacle of a diminishing list of paupers, for the results have not been obtained at the expense of the indoor accommodation. It is claimed that the rights of genuine

victims of misfortune are fully respected and that the process of elimination has involved only those to whom there was good reason to refuse help. We hope that this lesson will be taken to heart by guardians elsewhere so that society may be freed from some part of the incubus which the Poor-law lays upon it.

Deciduoma Malignum.

AT the meetings of the Obstetrical Society of London held on June 3rd and 16th a most interesting discussion took place upon the subject of deciduoma malignum. It was opened by Dr. J. H. TEACHER of Glasgow who read a paper based not only upon a large number of original observations but also upon some 188 cases which he had been able to collect from the literature and illustrated by a series of most beautiful microscopical preparations shown in the epidiascope. There are at the present time three distinct theories upon the nature and origin of this curious growth. The first is that it is a rapidly growing sarcoma with masses of syncytial cells contained within it; the second, VEIT'S view, is that it is a sarcoma growing in a uterus which has recently been the seat of a pregnancy; and the third, the view of MARCHAND, is that it is a tumour of an epitheliomatous nature derived primarily from the undifferentiated trophoblast, that is the primitive fœtal ectoblast, and containing cells representing both the syncytium and the layer of LANGHANS, or the outer coverings of the villi into which the trophoblast ultimately becomes developed. Dr. TEACHER brought forward a large amount of evidence in favour of this last view and pointed out that upon the continent it was supported by practically all those who had paid special attention to this subject.

That these tumours are in every case connected with a previous pregnancy may be held to be proved. It is true that in a few cases the existence of such a pregnancy has not been shown with absolute certainty, but the causal relationship between the two conditions can no longer be doubted. Since the meeting of the Obstetrical Society in 1896 at which this subject was discussed a very large amount of work has been done and many new cases have been described. The researches of PETERS, CARL SPEE, and others have enlarged our knowledge of the anatomy of the early ovum and of the development of the fœtal membranes. It has been shown that the primitive ectoblastic covering of the ovum, the so-called trophoblast, invades the uterine tissues and plays an important part in the imbedding of the ovum in the decidua serotina. In view of this physiological action of the trophoblast it is not surprising to find that in certain conditions these cells have the power of invading the maternal tissues and even of giving rise to metastatic growths in other parts of the body. And when we remember that the development of the intervillous circulation is mainly due to the erosion of the walls of the blood-vessels of the uterus by the trophoblast it is easy to understand that the spread of these metastatic growths takes place mainly through the blood stream. It can no longer be denied that the weight of evidence at the present time is in favour of the view that these tumours take origin from the epithelial covering of the chorionic villi and that they are of the nature of a chorion-epithelioma. The theory expressed in the name deciduoma that the growth arises from the decidual cells of the mother must be given up, and it cannot be said that there is any conclusive evidence in favour of VEIT'S view. The occurrence, too, of cases—at one time almost inexplicable—where secondary growths are found without the presence of any primary growth is easily understood when we remember that the transplantation of normal chorionic villi from the uterus to different parts of the body has been demonstrated to occur by SCHMORL and others. The view of PETERS that the syncytium is really due to degenerative changes affecting the cells of the trophoblast and is probably produced by the action of the maternal blood affords an explanation of the fact that in some of the tumours described there is no syncytium to be found. The old idea therefore that a growth could not be a deciduoma malignum unless syncytial masses were present must be abandoned. In those cases in which there are no syncytial masses but only discrete syncytial cells the resemblance to a sarcoma is very close and it is not surprising, therefore, to find that the relationship of the deciduoma malignum to the sarcomata is still believed in by a number of observers. A tumour composed of cells derived from the layer of LANGHANS alone will lend still further support to such a view. At the present day, however, as Dr. TEACHER clearly showed, the evidence points very strongly to the origin of these malignant growths from the epithelium of the trophoblast, and there for the time the matter may well be left. Whether they are best classed amongst the carcinomata or the sarcomata is a question that future investigations will no doubt decide.

Of more absorbing and deeper interest are the many other problems connected with these strange tumours. Do they represent an invasion of the tissues of the mother by a malignant growth derived from a fœtus—that is, from a son or daughter—or are they the result of a malignant growth arising in an included ovum—that is to say, from a brother or sister of the host? The latter conclusion would appear to afford a possible explanation of their occurrence in the male. If we may accept this so-called ovular origin for such tumours, then the fact that they are met with in growths of the testis and, as in the specimen shown by Dr. J. RITCHIE to the Obstetrical Society, even in a dermoid tumour of the anterior mediastinum in a male, is not so extraordinary as it at first sight appears to be. In such a case the containing tumour must be regarded as an embryoma—that is to say, a tumour arising from tissues of the developing fœtus which during development have been separated from the normal aggregation. Apart from these questions of pathological anatomy there are many clinical problems requiring elucidation. What is the exact relationship between a hydatidiform mole, a malignant hydatidiform mole, and a deciduoma malignum? What produces the malignant change in the mole and what is the cause of the diminished resistance in the maternal tissues? Why are tumours containing villi less malignant than those in which no such structures are found and how is the disappearance of the secondary growths that at times occurs after the removal of the primary growth to be explained? These are amongst the many problems with

regard to deciduoma malignum which this discussion has shown yet to await solution.

The Purity of Aerated Waters.

LONDONERS, according to Dr. W. H. HAMER, have in recent years come to drink less and less cold water. We gather from a recently issued report to the London County Council that, in his opinion, "had the habits of persons who lived in the years of the great cholera prevalence between 1830 and 1860 been those of the modern Londoner the ravages of the disease would doubtless have been less considerable than they were." There can, we think, be very little question of the fact. Mainly, perhaps, it is attributable to increase of tea-drinking, now reckoned to be five or six times as much per head as was the case 50 years ago, but also it is largely due to the increasing popularity of all kinds of "temperance beverages," mainly aerated waters. Figures of the average consumption of articles of drink per head, calculated by dividing the estimated amount of drink sold by the population consuming it, must be taken with considerable reservation. The total quantity of beer, mineral waters, and the like, consumed yearly in London is very largely a matter of guesswork and the inclusion of a relatively small number of inordinate drinkers—for example, those who practically live on beer and take almost no solid food—greatly affects the results. The approximate averages, which have been carefully worked out by Dr. HAMER, give a daily consumption by the male adult in London of one pint 16 ounces of beer, over one and a half ounces of wine and spirits, two ounces of milk, one pint of hot drinks, a quarter of a pint of aerated waters, and half a pint of cold water. On similar averages women take about half as much beer as, but considerably more hot drinks and cold water than, the men. The above calculations as regards aerated waters are believed to be under- rather than over-estimated and it is certain that there is a large and growing section of the population of this country, particularly in London and the northern manufacturing towns, which drinks neither beer nor cold water but obtains the bulk of its fluid in the form of hot drinks and aerated beverages.

The epidemic of arsenic poisoning in 1900 afforded striking evidence that contamination of a beer-supply may cause mischief on a very large scale indeed, comparable to that which may result when an important public water-supply is specifically polluted. The extensive use of aerated waters—reckoned at upwards of 200,000,000 gallons per annum in the United Kingdom—makes the purity of these beverages also a matter of very considerable importance. Dr. HAMER'S report founded on inquiries made at various London factories was not concerned with the precautions to secure the wholesomeness of the syrups, colouring and flavouring matters, and the various chemical ingredients of different varieties of non-intoxicating drinks, but was restricted to the consideration of certain points in the manufacture which affect the purity of the water which is aerated. It is satisfactory to find that the risk of contamination by lead, due to the ability of water supersaturated with carbonic acid gas to take up lead from leaden portions of the manufacturing apparatus, has been greatly minimised since attention was drawn to the matter in THE LANCET in 1893.[1] Lead has been largely discontinued and cylinders, pipes, and syphon heads now consist mainly of tin. As regards organic and bacterial impurity, everyone will agree that it is a right and proper demand that the water of which these drinks consist should be at least as pure as London tap water. In some large works a higher standard of purity is obtained by distillation, though the distilled water, owing to the practice of using ordinary tap water for washing bottles and because of other reasons, cannot be pronounced sterile. In other large works, whether using wells of their own or filtering the public supply, satisfactory precautions to secure the purity of the water appear to be taken. But the report notes that frequently the water after being drawn from the public supply was contaminated by the use of unclean charcoal filters or was stored in tanks or other receptacles where it was exposed to risk of contamination—for example, in badly ventilated cellars or even in bedrooms. Moreover, the cleansing of bottles, though frequently carried out with much care and with the aid of good machinery, was sometimes obviously open to criticism. Seeing how often bottles came back by way of "dust depôts" and otherwise in an extremely dirty condition too much attention cannot be given to the cleansing processes and especially to the necessity of securing the frequent renewal of revolving brushes and a thorough final washing, or, still better, a final steaming. The cleanliness of stoppers should receive as much care as that of the bottles. This is not always the case and the point is important as often hot water is not used for stoppers on account of the risk of spoiling their indiarubber rings. The numerous illustrations of uncleanly conditions given in Dr. HAMER'S report, though found mainly in establishments which have a comparatively small output, show that at many manufactories, both large and small, there is room for substantial and systematic improvement. The evidence available regarding the ability of carbonic acid gas to destroy pathogenic organisms such as the bacillus typhosus is inconclusive and quite insufficient to warrant the neglect of precautions on the assumption that such germicidal properties are exercised by the gas. And too much importance must not be attached to the claim that no very strong evidence of the spread of enteric fever, diarrhœa, or other ailments by means of aerated waters in this country is forthcoming. In cases of typhoid fever officers of sanitary authorities for years have inquired into drinking-water and milk as a matter of routine; recently they have added shell-fish and ice-creams, but attention is given comparatively seldom to aerated waters, and from the nature of the case, if these beverages were occasionally responsible for disease it would be extremely difficult to establish the fact.

There is much to be said in favour of a limited degree of official inspection and control of establishments where aerated waters are manufactured, with the object of enjoining all practicable precautions as to cleanliness and, if need be, of enforcing such precautions under penalty. It does not appear from Dr. HAMER'S report that any manufacturers were unwilling to give him facilities for making his inquiries, and apparently regulations on lines similar to

[1] See THE LANCET Special Analytical Commission on Mineral Water Machinery and Metallic Contamination, THE LANCET, Jan. 7th, 1893, p. 43.

those made by the Board of Health of New York, with powers of inspection by officers of the County Council, would be welcomed by some, at all events, of the chief London firms. In manufactories where food and drink are prepared it seems something of an anomaly that the State, through the Factory Department of the Home Office, should take stringent action to secure the safety and health of the persons employed at the works, but should afford no effective means of checking the proceedings of the manufacturer of food and drink who is ignorant or neglectful of the precautions necessary to safeguard the consumer of his products. It should be remembered that many of the factories which supply London are outside the London county area and that there is no reason for restricting the matter solely to London. The question affords another illustration of the desirability that to the Local Government Board or other central public health authority should be intrusted the duty of studying the conditions under which the manufacture of articles of food and drink is carried on and of taking action, either directly or through county councils, to secure that essential precautions are adopted on uniform and efficient lines throughout the country.

Annotations.

"Ne quid nimis."

THE EFFECT OF THE RECENT HEAVY RAINS ON THE QUALITY OF THE LONDON WATER-SUPPLY.

IT is not surprising that the recent floods have had a bad effect upon the drinking-water supplied to London by those companies which draw water for the purpose from the Thames or Lee. Statements have already appeared in the press to the effect that the water supplied by at any rate one company has shown a decided increase of organic impurity. As to whether this impurity is of animal or vegetable origin we can get no exact information, but a recent chemical analysis which we have made of the water supplied by the New River Company would indicate that the increased amount of organic matter occasioned by the flood is of a vegetable rather than of an animal kind. According to our results the New River water-supply shows a slight though quite distinct departure from its average standard of organic purity. To begin with, our recent analysis shows the presence of matter in suspension which is seldom the case, while the colour of the water is a dirty brownish yellow when viewed through a narrow glass tube containing a column of the water two feet long. As a rule the New River filtered supply does not show an excessive brown colour, the ratio of brown to blue usually being 4 to 20. Moreover, the solid matter obtained on evaporation of the water blackened considerably on heating, and gave off a smell resembling, however, more that of burning vegetable matter than that of animal matter. All these facts show an important change for the worse in the quality of the supply which has taken place coincidently with the use of storm water. This change might easily, of course, mean specific pollution—that is to say, pollution of a character which might give rise to disease. It is, however, probable that this change is due to an increased amount of vegetable humus matter which has passed into solution owing to the recent exceptional rainfall. The occurrence is of course a lesson which must not be lost sight of, as any variation in the quality of the water-supply may signify a source of danger to health, for it is reasonable to assume that with the passage of an increased amount of organic impurities into the mains the risk of the presence of actual pathogenic material is increased. If the process of filtration became for one moment inefficient the result might be very serious and the greatest possible watch must be kept over this vital process of water purification. We append (A) the chemical analysis of the New River supply which we made this week, together with (B) the analysis of the same water made at a normal period :—

	A.	B.
Free ammonia	0·0028	0·0005
Albuminoid ammonia ...	0·0084	0·0035
Chlorine	1·61	1·40
Nitrogen in nitrates ...	0·112	0·200
Nitrites	Traces	None.
Total hardness	15·64	16 62
Total solid matters... ...	20 44	19·60
Suspended matter... ...	Distinct	None.
Colour	Yellowish brown	Nearly colourless.

The results are given in grains per gallon.

It may be pointed out that the differences comprise a slight increase in the amount of chlorides, of free ammonia, and of albuminoid ammonia, and a diminution in the degree of hardness and in the amount of nitrates. Slightly softer water, therefore, would appear to have had access to the supply and the diminution of nitrates is probably due to the reducing action of the vegetable humus matter present. This view receives, at any rate, some support from the fact of the presence of distinct traces of nitrites. As we have said, the solid matter obtained as a residue on evaporation of the water charred considerably on heating and a smell was evolved which was more like that of smouldering paper than that of burning feathers or other nitrogenous animal matter.

THE BIRTHDAY HONOURS.

ON the occasion of the celebration of His Majesty's birthday the following members of the medical profession received the honour of knighthood—namely, Mr. Alfred Downing Fripp, C.B., C.V.O., Dr. Stephen Mackenzie, Dr. Edwin Cooper Perry, and Dr. Patrick Heron Watson, LL.D., F.R.S. Dr. Patrick Manson, C.M.G., LL.D., has been promoted to be a Knight Commander of the Order of St. Michael and St. George, Surgeon-General Colvin Smith, C.B., I.M.S., and Surgeon-General John By Cole Reade, C.B., A.M.S., have been made Knight Commanders of the Bath, and Surgeon-General George Joseph Hamilton Evatt, A.M.S., and Surgeon-General Adam Scott Reid, I.M.S., have been made Companions of the Bath. Sir Alfred Downing Fripp did excellent work in South Africa during the war and since his return home has supplemented that work first as a member of Mr. Brodrick's committee for the reorganisation of the Army Medical Services and subsequently as a member of the Advisory Board in connexion with the medical department of the army. He is a member of the visiting committee of King Edward's Hospital Fund for London. Sir Stephen Mackenzie is well known to our readers as a physician of particularly wide attainments. As a physician to the London Hospital and physician in charge of the dermatological department, and as physician to the Royal London Ophthalmic Hospital, he has been able to obtain an enormous experience and to turn it to most valuable account. Sir Edwin Cooper Perry, who some 20 years ago completed his classical successes at Eton and King's College, Cambridge, by graduating as senior classic, is now the superintendent of Guy's Hospital as well as physician and dermatologist to the hospital. He, like his colleague, Sir Alfred Fripp, is a member of the Advisory Board for the Army Medical Services. Sir Patrick Heron Watson, honorary surgeon to His Majesty in Scotland, is representative of the Royal College of Surgeons of Edinburgh upon the General Medical Council and is

an ex-President of the College which he represents. He possesses the Crimean medal which must be now a rare decoration among members of our profession and his busy public and professional career thoroughly merits the honour which has been bestowed upon him. Sir Patrick Manson, the medical adviser to the Colonial Office, has received promotion from Companion to Knight Commander of the Order of St. Michael and St. George for special services in connexion with tropical diseases. The titular distinction which he has received will be recognised not only by the members of our profession but by the whole world and is a very proper recognition of the services which he has rendered to civilisation.

THE ALCOHOL QUESTION IN FRANCE.

SOJOURNERS in France are apt on returning to England to institute comparisons in the matter of sobriety which are not to the advantage of this country. They will tell us impressively that during a fortnight's residence in Paris they never saw a drunken man and upon this text they will base a lurid homily dealing faithfully with the shortcomings of their friends and neighbours. Across the Channel, however, it is clearly recognised, as all who have read our Paris correspondent's letters know, that alcoholic stimulants are indulged in by the French people to an extent which constitutes a grave national peril and the supporters of the cause of temperance have been trying for some time to bring the sale of intoxicating drinks, and especially of absinthe, under State control. At the end of 1900 the Chamber of Deputies and the Senate were engaged upon the discussion of a Bill having this end in view. The result was the passing of a law for regulating the manufacture and sale of beverages which embodied the idea in the following important provision: "The Government will interdict by decree the fabrication, circulation, and sale of any essence recognised as dangerous and so declared by the Academy of Medicine." In substance this was an amendment carried in the Chamber of Deputies by M. Vaillant, in spite of the opposition of the Minister of Finance, who described it as "purely platonic." During the consideration of the Bill by the Senate M. Bernard objected to the giving of such powers as those mentioned to the Academy of Medicine and another senator expressed the opinion that even if absinthe was declared injurious by the Academy its sale would not be interfered with. Realising that his amendment was so worded that it was likely to have little of the effect which he desired, M. Vaillant submitted to the Chamber a motion setting forth that Article 13, the one in dispute, applied not only to essences but to drinks containing dangerous essences whether these were natural or artificial. This was carried without opposition from the Minister of Finance, who, however, remarked significantly that the article had already been adopted and that he should take the text as it stood. Considerable interest attaches to these proceedings from the novelty of the duty imposed upon the Academy of Medicine. The precedent of giving to the views of a scientific body the force of law is one not likely to be followed in this country and in this particular case the sequel shows how ineffective the measure proved. In November, 1902, in accordance with the requirements of Article 13, the Minister of the Interior invited the Academy to determine among the essences employed those which by their particular toxic character or by the abuse to which they were subjected ought to be dealt with either by absolute proscription or special regulation. The Academy, however, declined to confine its deliberations within the limits stated and ultimately forwarded to the Government a report in which it impartially condemned alcohol in all its forms while laying particular stress upon the dangers of "l'apéritif." Probably the framers of Article 13 were aware that absinthe produces a peculiar type of intoxication with convulsive symptoms and attributed, no doubt correctly enough, these features to the essences of wormwood, fennel, aniseed, coriander, balm, and the like, which enter into the composition of the many varieties. But in alcoholic drinks it is the alcohol which is the chief poison and the Academy could not very well ignore this fact. Absinthe can be made either by direct distillation or by mixing the appropriate "essence" with alcohol of suitable strength and, as the Minister of Finance perceived, the law so runs that the sale of the former kind would not be affected. Thus has once more been demonstrated the futility of attempting to make people sober by coercive legislation, for the effect of the amendment introduced on behalf of the temperance party in France is practically nothing. However desirable from the standpoint of the hygienic idealist total abstinence may be the prohibition of the sale of alcohol as a beverage would have such far-reaching consequences that it may be said to be outside the sphere of practical politics. In the first place the average citizen likes his absinthe or beer, as the case may be, and however depraved this sentiment may be it is one not likely to be eradicated for a long time to come. Alcohol is moreover such an important source of revenue that any financial Minister may be excused for displaying little sympathy with efforts to force from his hand his trump-card. As far as France is concerned there is further the consideration that many of the inhabitants are interested directly or indirectly in the preparation and sale of wines, not only for home consumption but also for export, and any blow struck at this industry would arouse a storm of indignation which no Government, especially one of the unstable type found in France, could hope to withstand. Teetotalers in general, like hobby-riders of more objectionable tendencies, are apparently unable to devote themselves to the pursuit of their aims without letting their emotions swamp their reasoning powers. Alcohol plays in the history of most men a rôle which the temperance enthusiast will not take the trouble to understand. Let us eat, drink, and be merry for to-morrow we die. That sums up the working philosophy of the ordinary man, whatever religious convictions he may profess. He is not a sufficiently well-trained physiologist to estimate the effects of his potations on his nervous or circulatory system. Quite possibly he is sometimes misled by the lying advertisements which tell him that some particular wine or spirit will supply him with a fresh fund of energy when he is tired or depressed. The one thing which he does understand is that it is possible to escape temporarily, by means of alcohol, from the burden of life. To such a degree as that burden is lightened or removed in other ways so will diminish the demand for intoxicants.

THE IMPERIAL VACCINATION LEAGUE.

IN a recent letter published in our columns Mrs. E. Garrett Anderson, M.D., who is acting as honorary secretary to the Imperial Vaccination League, sets forth its objects and appeals for additional subscriptions to enable it to carry into effect the suggestion made by the President of the Local Government Board. Mr. Long at the beginning of the present year, when he received a very influential deputation from merchants, municipal authorities, schoolmasters, and others anxious to obtain an extension of the arrangements for primary vaccination and revaccination, urged upon his hearers the vast importance of assisting candidates at Parliamentary elections to meet the pressure of the anti-vaccinationists. No one who has any knowledge of local administrative methods can doubt the soundness of this advice, and in regard to central administration itself Mr. Long has himself complained in the House of Commons

of the unfair pressure which in general matters private Members of Parliament bring to bear upon Cabinet Ministers. The Imperial Vaccination League has appointed a political secretary whose duty it will be to attend election meetings and to see that any pressure put upon a candidate by the anti-vaccinationists is adequately counterbalanced by pressure from the other side. We have on several occasions advocated in THE LANCET some such course as this, and we have insisted that in matters of vaccination, as also in those relating generally to the public health, the education of the people is the surest road to progress. But all this requires money and Mrs. Garrett Anderson is appealing for an additional £500 per annum for three years to enable the executive committee to carry out Mr. Long's suggestion. It is pointed out that 100 annual subscribers of five guineas each will provide the necessary funds, and having regard to the position taken up by traders and others as to the enormous pecuniary losses occasioned by a visitation of small-pox there should be no difficulty in procuring the necessary funds. Apart from this special object, the aims of the Imperial Vaccination League are worthy of cordial support. Briefly stated, the league recommends obligatory revaccination of children before the termination of their school curriculum, the extension of the conscience clause to revaccination, and the transference of the administration of the Vaccination Acts to one or other of the public bodies having administrative health functions. With all these objects we are in agreement and we trust that this league will receive the material support which it deserves. In the matter of education the league has issued a pamphlet entitled "Ten Answers to Questions on the Subject of Vaccination for the Use of Parliamentary Candidates." This pamphlet is an eminently honest exposition of the situation and as such it contrasts most favourably with the hysterical distortions of the truth issued by the opponents of vaccination. May the electorate be able to discriminate and may they make use of the advice given in the last answer, which is this: "Ask an anti vaccinist with no vaccination scars to spend an afternoon with you in a small-pox hospital, having yourself been recently and efficiently vaccinated. He will not accept the invitation."

THE BUILDING OF HOUSES ON INSANITARY GROUND.

EVERYBODY has noticed in the suburbs of London or of rising provincial towns good, sweet, level, meadow land offered for sale for building purposes. Presently a considerable part is sold in plots, but a few plots remain unpurchased. By-and-by on these plots a series of hillocks arise, composed of filth and rubbish dumped down on them by dust-carts. This sort of thing goes on for a year or two until one day a hoarding is made to inclose the land, carts bring building materials, and workmen commence to be busy to erect a row of "desirable villas." Very often these villas have no cellars and the ground floors are but a short distance from the soil which may or may not be concreted first. Before the villas are quite finished, at any rate while they are reeking with damp, a young couple come up and purchase one on the easy-payment system, and it is hardly to be wondered at if the wife grows pale and the children are never well. Then the husband is informed, probably by the occupant of one of the villas built on the original meadow, that the newcomer's dwelling was built on a rubbish heap, at which, perhaps, he moves away, regardless of his contract to purchase or of his pecuniary loss. Houses ought not to be built in defiance of all laws of health on rubbish heaps and muck heaps or on improperly drained marsh land close to rivers which have not been suitably embanked. The papers have recently been full of accounts of the very serious flood at Ilford, Little Ilford, and East Ham, when the river Roding overflowed and burst its banks and 700 houses were most disastrously flooded. Some of the newly erected villas were completely surrounded by water which reached to the top of the iron railings in front of the houses, while a few feet away standing out of the water were notice boards informing the spectator "This desirable building land is to be let." We understand that a Bill is now before Parliament to enable the East Ham Council to prevent the further building on this "desirable" land. One result of the unrestricted building on such land is that the subscriptions of the benevolent are appealed for to make good the damage done by the thoughtless land speculator and jerry-builder, and not only, in the first place, does this divert public charity from the hospitals but the hospitals have to bear in addition the cost of the inevitable aftermath of illness which succeeds the occupation by poor working families of such death-traps.

THE EPILEPTIC AURA: ITS NATURE, FREQUENCY, AND POSSIBLE SIGNIFICANCE.

A DISCUSSION on the subject of the epileptic aura, its nature, frequency, and possible significance, took place at a recent meeting of the New York Academy of Medicine and an account of it was published in the New York *Medical Record* of June 13th. The contributors included Dr. William Spratling, medical superintendent of the Craig Colony for Epileptics, New York State, Professor William Leszynsky, Dr. Pierce Clark, and others. Dr. Spratling, in opening the discussion, said that the word "aura" was used to indicate the warning or premonitory symptoms of an epileptic seizure. It was now generally believed that the aura originated in the central nervous system and was referred to the periphery. It was the initial part of the epileptic attack. A study of 1325 epileptic patients, of whom 815 were males and 510 were females, showed that an epileptic aura was present in 589 cases, or 45 per cent. The various forms of the epileptic aura could be grouped under four heads—viz., psychical, sensory, motor, and irregular auras. Those of a sensory nature were the most numerous and were perhaps of the greatest importance. A psychical aura was present in 4 per cent. of the cases and a motor aura in 2 per cent. A psychical aura might make its appearance in the form of a temporary disturbance of mind, for instance, a sudden acceleration of the imagination, preceded sometimes by a slight confusion of ideas. Fear of a primary and unreasoning character was often met with in connexion with the psychical aura but its origin was unknown. Sensory auras were chiefly visual (flashes of white or coloured light). Rarely there was temporary blindness. Sometimes surrounding objects appeared to be greatly magnified for a few seconds before the convulsive attack came on (megalopsia). When colour only was seen it was usually red or blue. Auditory auras came next in order of frequency. They consisted of "buzzing" noises in the head, sounds as of waves of the sea, and "roaring" noises. Occasionally auditory and visual auras were associated. The epigastric aura was the commonest of all the remaining sensory auras. It was present in 200 cases, or 15 per cent., and consisted of a choking or deep-seated burning sensation in the epigastrium. Many of these patients were sufferers from indigestion. Running or walking hurriedly before the onset of the fit constituted one of the most common forms of the motor aura and sometimes the patient turned round two or three times instead of running. The more sudden and complete an epileptic attack, says Dr. Spratling, the less likely was it to be preceded by an aura. Professor Leszynsky pointed out that cases of idiopathic epilepsy with a motor

aura should not be confounded with Jacksonian epilepsy. It was only exceptionally that a threatened fit could be cut short or aborted by treatment begun as soon as the aura appeared. Dr. Clark said that in his opinion epilepsy was always a sensory disturbance of the cerebral cortex with an explosive motor manifestation. He believed that the epileptic discharge or "nerve storm" began in certain cortical cells which he would designate as cells of the sensory type. These cells, he stated, were present chiefly in the second layer of the cortex. A discharge of these cells not only constituted the aura or sensory disturbance but as a secondary result the motor pyramidal cells of the cortex were "temporarily withdrawn from the inhibiting influence of these sensory cells" and were thus permitted to discharge freely and violently, thereby giving rise to the convulsion or epileptic fit. "There would be some sort of aura," argues Dr. Clark, "in every case of epilepsy if the rate of cerebral diffusion of the discharge were slower or less complete in range" than in the most severe cases. The explanation of the great frequency of visual, auditory, and epigastric auras lay in the fact of the extensive cortical representation of these sensory functions. The length of time an aura lasted and the degree of its elaboration were parallel with the reluctance of the other cerebral centres to participate in the fit. In other words, the longer and more elaborate the aura the less disposed was the motor cortex to react convulsively. Many epileptics well on the road to recovery, concluded Dr. Clark, have only the aura of their former fits of *grand mal*. To such patients Dr. Clark gave a bottle of amyl nitrite or ammonium "salts" to carry and to smell immediately the aura was experienced, as this procedure warded off possible epileptic attacks. Dr. Clark cited two cases of the rare "intellectual aura" in which a dreamy state with reminiscence of former experiences was developed. This lasted one or two minutes and the patient sat still in deep and pleasant reverie. Dr. Clark thought that this mental state might correspond to that of the Buddhist and the Shinto devotee who could while in this condition conjure up recollections of a former state of existence. Dr. Thomas Prout said that painting the cerebral cortex with cocaine inhibited fits, a fact which favoured the view of the sensory origin of the epileptic fit. Dr. Louise Robinovitch regarded the frontal lobes of the brain as in a state of weakened functional activity prior to an epileptic fit, so that the sensory centres were for the time freed from the inhibitory action of the frontal lobes. Auras were then developed with facility. The exhilaration manifested occasionally during an aura was akin to that observed in general paralysis. Persons of inferior intelligence were especially apt to experience auras.

RURAL WATER-SUPPLIES.

THE River Pollution Commissioners in their report issued in the year 1874 made a classification of drinking water which is still often quoted. In the table which they give of potable waters "according to palatability and wholesomeness" river water to which sewage gains access is described as "palatable." The opinion of the Commissioners on this point is not one which deserves to be perpetuated, although an expert was heard to assert at Lord Llandaff's Commission on the Metropolitan Water-supply that he would not object to drink unfiltered Thames water. The table of the River Pollution Commissioners is quoted, not, it should be said, with entire approval, by Dr. C. J. Russell McLean in a little pamphlet on "Rural Water Supplies" which he has recently published.[1] The Commissioners' classification in regard to the wholesomeness of potable water was that spring, deep well, and upland surface waters were "wholesome," that stored rain-water and surface water from cultivated land were "suspicious," and that river water to which sewage gains access and shallow well water were "dangerous." Dr. McLean gives a classification of his own in the case of supplies for rural districts, taking into account the practicability of the different available sources of supply as regards quantity and more especially as regards purity and wholesomeness for drinking purposes. Naturally assigning to rain-water "the first place for cooking and laundry purposes," the table is as follows: (1) deep well waters; (2) properly collected and filtered rain-water; (3) permanent or rock spring waters; (4) intermittent or land springs; and (5) shallow well-waters. Dr. McLean mentions a point which has not escaped the notice of other observers that rain is the *fons et origo* of all our water-supplies. It seems, however, that he has not fully assimilated the fact, for he says on the page which follows the one containing this statement, "The rainfall in Great Britain is quite inadequate as a water-supply for our cities and large communities, inasmuch as it is estimated to yield only about two and a half gallons of water daily for each individual." It is likely that the writer did not express very clearly what he had in his mind when he wrote the long sentence from which we quote, but he says, intelligibly enough, that he considers collected rain water to be one of the most suitable, if not actually the best, of the possible sources of supply for rural districts, and he dwells in some detail on a rain-water separator invented or sold by a gentleman of Haslemere and gives particulars of the price of the apparatus. Dr. McLean speaks of "a strange and unreasonable prejudice" which he says exists in many districts against the use of rain-water for drinking purposes, but he considers this objection by no means insuperable. Practically, however, there is no doubt that the taste of rain-water is strongly objected to by many people, and it is important that a supply should be palatable as well as pure, otherwise it will not be drunk in its natural state. The pamphlet on "Rural Water-supplies" does not, so far as we have seen, contain any new facts and those who wish for information on the subject will do well to refer to Dr. Thresh's book which has already been noticed in these columns.

[1] Sanitary Publishing Company, London. Price 1s.

THE ELEVENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

THE latest programme of this Congress and circular concerning travelling and hotel arrangements may be obtained from Dr. Paul F. Moline, 42, Walton-street, Chelsea, London, S.W., who is the honorary secretary of the British committee of the Congress. Dr. W. H. Corfield is the chairman of the British committee. The programme has already been summarised in THE LANCET of June 27th, p. 1833. Membership subscriptions by cheque or money order for 25 francs or £1, accompanied by the full name, address, and description of the subscriber, may be sent to the treasurer of the Congress, M. J. Sterckz, chef de bureau at the Ministry of Agriculture, 3, Rue Beyaert, Brussels. The return fares from London to Brussels are stated in francs as follows: *viâ* Ostend, first-class 88.40, second-class 65.00; *viâ* Harwich, first-class 60.60, second-class 38.60; and *viâ* Calais, first-class 110.15, second-class 81.15. The tickets are issued from June 1st. A list of 17 hotels is given together with the prices charged. The Grand Hôtel, the Hôtel Métropole, and the Hôtel de Bellevue seem to be the most expensive, the highest charge being 12 francs per diem per person for a room on the first floor, attendance and light included. This price diminishes according to the floor on which the room is situated. These hotels charge for lunch from 1.50 to 2 francs, and for dinner from 5 to 8 francs. The cheapest hotels seem to be the Hôtel de Bordeaux, the Hôtel des Boulevards, the Hôtel de la Poste, and the Hôtel Prince of Wales, the charges of

which range from 2.50 to 5 francs per diem for rooms, from 1 franc to 1.50 francs for lunch, and 4 francs for *table d'hôte* dinner. A note is appended stating that as the greatest concourse of visitors generally takes place in September the members of the Congress are requested in their own interests to secure their apartments at least ten days before their arrival. Season tickets available for 15 days over the whole system of the Belgian State Railways are issued at all the stations on the system. An applicant for such a ticket must send an unmounted photograph of himself, measuring six by four centimetres (approximately a carte-de-visite), to the station and should indicate the day and hour of his trip (and at least one hour in advance of his journey) in order that a ticket of this kind may be prepared and held at his disposal. The photograph is affixed to the ticket which must be signed by him immediately on its receipt. The prices of these tickets are: reserved compartments or saloon carriages, 60 francs; second-class, 40 francs; and third-class, 23 francs. In addition, a deposit of 5 francs is demanded. These tickets are not transferable and are not available for travelling by special or excursion trains. Season tickets available for 15 days over the system of the Belgian State Railways, the North Belgian lines, and the Western Flanders lines are issued at the following prices: first-class, 72 francs; second-class, 49 francs; third-class, 29 francs. A deposit of 5 francs is also demanded. In applying for such tickets one hour's previous notice is sufficient at the principal stations, while at the other stations 24 hours' previous notice must be given.

SICK-ROOM ACCOMMODATION AT ETON COLLEGE.

THE letters from Lord Medway which appeared in the *Times* of June 4th and 6th, together with that from the bursar of Eton College which appeared in the *Times* of June 5th, seemed to us to deal with matters of very great importance. So we have investigated the subject for ourselves and can state from personal observation that there exists the following accommodation for cases of illness. Firstly, the sanatorium, containing 12 beds designed for cases of scarlet fever. Secondly, within a short distance of the sanatorium is a building with room for 10 beds (the beds being divided from one another by partitions). This building is intended for cases of diphtheria or small-pox and is divided into two separate portions, each containing five beds. These beds are also used for the isolation of "suspects." Thirdly, a small hospital intended for the use of serious non-infectious diseases, the chief objection to which is that it is too far away—about three-quarters of a mile—from the houses. Moving a case of appendicitis or of typhoid fever is always a matter for serious consideration. This building contains five beds. It is possible, however, that a similar hospital will be constructed upon the site of Mr. Kindersley's house which was recently burned down. Fourthly, there is the new wing of the College buildings which contains four beds and two rooms which can be used for two nurses, or one patient and one nurse, and to which oppidans can be admitted in case of necessity. Fifthly, most of the boarding houses are now provided with sick rooms in a quiet part of the house, some of them being in the private part of the house, in which cases of measles or influenza or other acute cases, whether infectious or not, can be treated. When a new house is built the terms of the lease stipulate that at least two such rooms shall always be kept in readiness for emergencies. It may be said, "Why should not Eton have a central hospital like those which exist at other schools, to which any case of infectious disease could be promptly removed?" But it must be remembered that Eton differs from nearly all other public schools in one important particular—namely, that nearly every boy has a separate room. The exceptions are "Long Chamber" and the few instances where two brothers occupy a joint room. Thus infection is not likely to spread in the same manner as when a number of boys sleep in one dormitory. Scarlet fever and diphtheria, together with small-pox, are provided for and the only other virulently infectious diseases which are likely to occur are measles and influenza. The latter, when it does appear in epidemic form, strikes down hundreds at once and any system of isolation is nullified. Measles, too, is at its most infectious stage before the sufferer himself falls ill, and in the experience of the medical men practising at Eton the exanthemata do not spread in the houses or in the school as a result of the lack of a central hospital. A system of mutual notification exists among the medical men whereby on the outbreak of any infectious disease a notification is sent round which states the name of the boy, his house, his classical division, and his mathematical division. When other cases, if any, follow, it is found that the boys forming this batch of cases are those who have sat next to the original victim in school or in chapel, or who have been his messmates or particular friends in his house. Moreover, the intervening period of incubation shows unmistakably that infection was imparted before and not after the original patient was shut up in his room. A central hospital big enough to deal with an epidemic of infectious disease would have to contain at least 120 beds. It would have to be kept always in readiness for use at a moment's notice and would in all probability be used only once in three or four years. Moreover, if in the case of an epidemic any boy were to be crowded out the indignation which would be very possibly expressed by his parents would be naturally extreme. We cannot say that the accommodation provided for sickness is as good as that to be found in a perfectly up-to-date modern hospital, but it is quite as good as, and in some instances better than, that to be found in any private house of the smaller order or possibly in more palatial dwellings. Nurses when required are obtained from London or from the Princess Christian's Nursing Association at Windsor. Thus it would seem that Lord Medway's letter was founded on a misapprehension.

THE HANDEL FESTIVAL.

THE Handel Festival of 1903 has come and gone and we have no hesitation in saying that so far as the chorus, the band, and the organist went it was the best in point of performance that has ever taken place. We suppose that it is hopeless to imagine that the Festival Committee will ever give up the performance of *The Messiah*, but seeing that that great work is so frequently performed and so well known we think that another oratorio, say *Saul* or *Samson*, might well take its place, at least occasionally. Another point on which we differ from the committee is the inclusion, in the rehearsal programme at least, of two disgraceful advertisements emanating from quacks. One quack trades under the name of "The Ideal Form Co." and sells a nostrum known as "Dr. Brown's Ogilato," which pretends to increase the size of the mammary glands. The other quack is "Dr. W. S. Rice" who pretends to cure rupture "without pain, danger, operation, or an hour's loss of time." We have no hesitation in saying that advertisements such as these would be a disgrace to any publication and should certainly have never appeared in any publication which has to do with Handel. To pass to the more pleasing act of praise we may say at once that the basses and tenors of the chorus were magnificent. The tenors were a body giving real tenor quality and the basses were marvellously rich and sonorous. The sopranos and altos seemed to us somewhat overweighted by the tenors and

basses. The band, as we have said above, was very good, the strings and wood wind being on the rehearsal day, at any rate, particularly noticeable in the overture to *Acis*. Mr. Walter Hedgcock did yeoman's service at the organ, but the feature of the festival to our minds was Sir Walter Parratt's beautiful playing of the solo part of the organ concerto No. 4 of the first set. He played with perfect artistic restraint, only using diapason and flute stops. Sir Walter Parratt never forgets, as do too many organists, that an organ is an organ and not an inferior orchestra. With regard to individual items, the two choruses which impressed us most were the extraordinarily difficult "The people shall hear," from *Israel in Egypt*, and the "Wretched Lovers," from *Acis*. The sledge-hammer effect of the emphasised "He" by the tenors and basses in "He spake the word" was also marvellous. With regard to the soloists it would have been better if Mr. Charles Saunders had sung the music of "The enemy said" as Handel wrote it and not as Mr. Saunders presumably thinks it ought to have been written. Dr. Cowen and the veteran Mr. Manns, who still retains his position as musical director, may well be congratulated.

THE PREVALENCE OF SMALL-POX.

DR. C. H. PHILLIPS, the medical superintendent of the Bagnall Small-pox Hospital, has issued to the North Staffordshire Joint Small-pox Hospital Board a most interesting report dealing with the effects of vaccination upon the patients and its influence upon the course of the disease. The number of patients dealt with in the report is 189. They are divided into four age periods—namely, under 10 years of age; between 10 and 20 years; between 20 and 30 years; and over 30 years. The number of deaths was 6 in all—namely, 2 among the unvaccinated patients, 25 in number, or a mortality of 8 per cent., and 4 among the 164 vaccinated patients, or a mortality of 2·4 per cent. Apart from the difference in the death-rate among the vaccinated and the unvaccinated the report shows very well how efficient vaccination modifies the type of the disease. Thus, in 20 cases in which the patients had been thoroughly vaccinated in infancy and had vaccination scars of the approximate area of half an inch not one died and in all the disease was of a very mild type. Of the 25 cases in which the patients had never been vaccinated two died and in 24 the type of the disease was "severe confluent," while in one it was "hæmorrhagic confluent." Of 24 patients showing scar area of approximately one-sixteenth of an inch three patients died, in all of whom the type of disease was "hæmorrhagic confluent." The remaining vaccinated patient who died showed a scar area of approximately three-eighths of an inch and in his case the type of disease was "hæmorrhagic confluent." When patients were vaccinated after infection the small-pox ran a mild course.

THE DIAGNOSTIC VALUE OF THE PLANTAR REFLEX.

THE value of the observations of Babinski made in 1896, supplemented in this country by those of Dr. James S. Collier, has been universally acknowledged. We referred last week to Dr. Marinesco's observations upon the frequency and significance of this reflex published recently in the *Archives de Neurologie*; and in the May number of the *Review of Neurology and Psychiatry* Dr. Wilfred J. Harris has a paper of interest and importance upon the same subject. In this, while freely acknowledging the value of the Babinski sign as in the vast majority of cases indicating disease of the pyramidal system, he utters a word of warning against the acceptance of the view that in every case it indicates such disease, and at the same time he adduces instances of its absence in cases in which the pyramidal system was undoubtedly diseased. The first case mentioned is that of a boy, aged 12 years, in whom right-sided weakness was present, yet the plantar reflex on that side was not definitely either flexor or extensor. An infiltrating glioma was found post mortem in the left frontal region. Dr. Harris does not mention whether there was definite sclerosis in the pyramidal tracts and there was no clinical evidence of this. Dr. Harris next mentions a case of injury to the spinal cord in which two hours after the accident extensor plantar reflex was present, to show that this reflex does not necessarily indicate lateral sclerosis but merely interference with the function of the lateral columns, and he gives an account of two cases of obviously organic hemiplegia, in each of which a flexor response from the sole was present; he also describes two cases of apparently functional paraplegia in which an extensor plantar reflex was present. From such observations it is evident that, as with other signs of nervous disease, there is no infallibility attaching to the plantar reflex. Yet, as Dr. Harris acknowledges, in the vast majority of cases the significance of the sign is undoubted and its flexor or extensor character is usually to be relied upon as a sure diagnostic sign.

THE ANNUAL REPORT OF THE PRINCIPAL OF THE UNIVERSITY OF LONDON.

THE interest which the Principal's report of the progress of the University of London during the year 1902–03 would in ordinary circumstances have aroused was somewhat marred by the unusual conditions of its presentation. Representatives of every department of the University had met together in unprecedented numbers to do homage to the first recipients of honorary degrees. The novelty and brilliance of the scene and the impatience of the audience to welcome its honorary graduates interfered with the due appreciation of the judiciously shortened extracts from his report which Sir Arthur Rücker read to the meeting. The universally approved parsimony of the Senate which led it to confer its honorary degrees upon none but the Prince and Princess of Wales, Lord Kelvin, and Lord Lister in no way detracted from the publicity given to the proceedings by the press. The Principal's effective peroration has been published widely and we are glad to give it still further circulation. "Those who are engaged in the work are convinced that the one thing needful is endowment adequate to make good the apathy of the past and to secure the promise of the future. It is for London to say whence and when that endowment will be forthcoming and to determine whether a University which is providing for all learners, from the evening student to the candidate who has already graduated elsewhere, shall control means and appliances worthy of the highest educational institution in the capital of the empire." This question of endowment is indeed the key to the whole position. No careful reader of the Principal's report, which is now before us, can fail to see that this fact is appreciated by the Senate and that it equally appreciates that it is in the first place necessary that it shall prove itself capable of judiciously expending in the best interests of every class of student whatever sums the munificence of private donors or the votes of public bodies may place at its disposal. Three facts to which the Principal refers with satisfaction would seem to indicate that the work of the Senate is already bearing fruit. In the past 12 months the entry for the matriculation examination increased by 700 candidates, 269 graduates of other universities were registered as entering upon courses of study, and £25,000 were contributed from various sources without the issue of any general appeal. We have so recently referred to the special features of last year's work, so far as it relates

to medical education, that the Principal's remarks on these subjects do not now call for detailed comment. It is eminently gratifying to the medical profession that of the first four honorary graduates of the University of London one should be a surgeon and that it should have fallen to the lot of a physician as Vice-Chancellor of the University to present the Prince and Princess of Wales for their degrees. We are glad to note that the Principal speaks hopefully of the prospects of the scheme for concentrating the preliminary and early subjects of medical study in a university institute at South Kensington. It is true that for this, as for much other work of the University, large sums of money are required. It is to be hoped that the privately circulated appeal for this object may shortly meet with an adequate response. The magnificent result of Mr. Haldane's work on behalf of what is commonly called the London University Charlottenburg scheme will encourage those who have this project at heart. The new regulations for examinations and curricula for medical students will shortly come into force. They represent all that can be effected by the Senate to improve the conditions of medical education in London until it is in a position to endow the laboratories and to increase the inadequate remuneration of the professors and demonstrators. As a first step towards securing such pecuniary assistance it appears to be essential to modify the extravagant arrangement whereby the comparatively small number of medical students in London require the services of 12 or more lecturers on each of the earlier subjects of the curriculum.

THE DRAINAGE OF LONDON AND THE FLOODS.

Sir Philip Burne-Jones, writing from his studio at Hammersmith to the *Times*, speaks of his experience of the recent floods and calls the attention of the public to the inadequate drainage of London. In Kensington, Hammersmith, Fulham, and Chelsea a large number of houses have been flooded and damaged by rain water mixed with sewage. The danger to health and the discomfort resulting are obvious, and in the prevention of such disasters Sir Philip Burne-Jones very properly refuses to believe that we have exhausted the resources of civilisation. Not only is it possible to remedy the evil but measures have been proposed and approved only they have not been applied. The vestry of Hammersmith complained, we are told, to the London County Council in 1888, but it was only in 1895 that, after many more complaints had been made, the main drainage committee recommended the construction of an additional outfall between Old Ford and Barking and of an intercepting sewer from Paddington to Old Ford. Then there were to be two more pumping stations, one in Chelsea and the other in Fulham. But these recommendations were not adopted and though it was decided that local floods were in need of "immediate attention" they did not receive any attention whatsoever. In 1897 further reports were made and it was then decided to construct the pumping stations, but again nothing was done. In 1899 the main drainage committee recommended the Council to spend £1,250,000 in order to bring the main drainage system up to date. Four years have now elapsed since this last report and recommendation and still, and once again, nothing has been done. Such, in brief, is the story which Sir Philip Burne-Jones lays before us and it is most natural that he should complain of what appears to be long, unjustifiable, and dangerous neglect. On the other side, it must be admitted that the position of affairs is perplexing. It is proposed to add more than a million sterling to the heavy burdens which Londoners have to bear so as to patch up an antiquated system of drainage which can never be made to work to the entire satisfaction of the more advanced among modern sanitary engineers. The opinion is gaining ground more and more that it was a mistake to allow rain water to mix with sewage. That was the only available method half a century and more ago but the resources of civilisation have expanded since that time. It costs an enormous amount of money to raise small rivers of rain water by means of steam pumps. If this artificial means of providing a fall for sewage to flow on to distant outfalls were limited to sewage alone the cost would be very materially reduced. On the other hand, storm waters, instead of being cramped and confined in sewers, could follow much more rapidly the course indicated by nature to the nearest point in the river. Even if floods did arrive they would be floods of clean water and not of sewage. But it is not necessary on this occasion to discuss so controversial a matter as the rival merits of the separate and of the combined systems of drainage. All that is intended at present is to point out that the entire system of drainage as applied to London is challenged, its efficacy is questioned, and the adoption of totally different methods is not without advocates. This may in some measure account for the hesitation to spend yet another large sum so as to extend the old methods. But, nevertheless, this is not a sufficient excuse for doing nothing and for allowing floods to injure the property and the health of a large section of the population. If there are new systems and methods that give good promise could they not be applied experimentally and locally to one or more of the suffering districts, where something, whether on old or on new lines, must be done and that immediately.

THE ETIOLOGY OF APPENDICITIS.

IN THE LANCET of June 27th, p. 1839, there appeared a letter from Mr. S. Kellett Smith concerning the increase of appendicitis which has apparently taken place during recent years. Mr. Smith appears to have no doubt about the actual increase, but we are not quite so certain, as undoubtedly improvement in diagnosis will account for some of the excess of cases met with at the present time compared with those noted 20 or 30 years ago. Nevertheless, his remarks are worthy of careful thought. He suggests that the ingestion of chilled or frozen food especially liable to rapid decomposition may result in a more septic state of the intestine than prevailed before the days of cold storage and that this greater septicity may in its turn account for the greater virulence of those irritations to which the cæcum and the appendix have always been prone. This theory would seem to be a plausible one, but we should like to know whether it can be shown that the intestine is in a more septic state now than it was when frozen and chilled comestibles were not so largely in common use.

DERMATO-MYOSITIS.

IN the *Boston Medical and Surgical Journal* of June 11th Dr. F. Forchheimer has published a case of dermato-myositis—a rare disease first described by Unverricht i 1887, though cases the nature of which was not understood had been previously reported by Wagner and Potain. A neurotic woman, aged 40 years, received a shock in June, 1901, became ill, and complained of irregular menstruation, constipation, headache, and pains in various parts of the body. On August 20th she noticed a pustule on the left leg where the garter had pressed. On Sept. 8th there were in the left gluteal region itching and an erythematous eruption with one pustule. During the next few days three pustules appeared in the ischio-rectal region. Here a deep swelling formed which was repeatedly incised without yielding any pus. She was emaciated, weak, and depressed, with a temperature of 102° F. and a pulse of 110. There was an erythematous rash on the face and the eyelids and the region around the eyes were very puffy. The rash extended over the

neck, the chest, and the back. The spleen was felt below the ribs. The skin over the lower end of the right peroneus brevis became the seat of hard œdema. On Oct. 28th the right thigh became œdematous and the rectus muscle became swollen over an area of the size of the palm. Respiration was painful which was found to be due to an inflammatory condition of the intercostal muscles. The œdema extended over the abdomen and lower thorax. The patient's general condition deteriorated, there was remittent pyrexia, ranging from 100° to 102°, and the pulse was rapid and somewhat irregular. Furfuraceous desquamation of the affected portions of the skin took place and was followed by pigmentation which never disappeared entirely. In November gradual improvement began. Convalescence was very slow and only in the autumn of 1902 could she walk with any comfort. In March, 1903, there was pigmentation of the face, but to a much less extent than before, the affected muscles were still slightly tender, and movements requiring effort were clumsily performed. Unverricht defined dermatomyositis as characterised by fever, enlarged spleen, œdema, acute myositis (especially of the limbs with extension to the muscles of respiration and deglutition and not affecting the ocular muscles, the tongue, or the diaphragm), and urticarial or erysipeloid eruption. In a later paper he added hæmorrhagic eruptions as of special importance because of their constancy. From the observation of a larger number of cases than Unverricht saw Lorenz extended the description. According to him there is usually a prodromal period of several days with malaise, rheumatoid pains, and an ascending type of fever reaching 104°. Then the cutaneous and muscular symptoms begin. The œdema usually begins in the face, especially in the eyelids. There are always profuse perspirations. A large number of muscles are affected; in most of the cases the muscles of the trunk (intercostals and diaphragm) are involved in many cases those of the pharynx and larynx. The onset of the disease may be gradual or sudden and the course may be acute, subacute, or chronic. The case related above is unusual in the presence of pustules and in the absence of sweating. Oppenheim has described a case in which ulcers were present and in which there was no sweating; on the contrary, the patient complained of dryness of the skin. The etiology and pathology of dermato-myositis are unknown but various theories have been brought forward.

THE DANIELS ETHNOGRAPHICAL EXPEDITION TO NEW GUINEA.

AN expedition will start for New Guinea in August for the purpose partly of ethnographical investigation but also with the important object of collecting data in regard to the distribution and etiology of cancer, this portion of the work having been officially recognised by the Cancer Research Committee. A grant has been made by the Royal Society towards the expenses of the expedition which has been organised in London by Major W. Cooke Daniels. The party will be unusually well equipped and a schooner with auxiliary power to which is attached a sea going launch will serve as a moveable base. The members of the expedition comprise Major Daniels, Dr. C. G. Seligmann, Dr. W. Mersh Strong, and Mr. A. H. Dunning. Major Daniels, who has had much tropical experience, will devote himself mainly to ethnology, in which the other members will also take part; for the experimental psychology Major Daniels has also made himself responsible. Dr. Seligmann, until recently the superintendent of the clinical laboratory, St. Thomas's Hospital, is the representative of the Cancer Research Committee on the expedition of which he is in general medical charge. With Dr. Strong he will pay attention to medical and pathological questions of a more general character. As a member of the Cambridge Anthropological Expedition organised by Dr. A. C. Haddon in 1898 Dr. Seligmann has already visited Torres Straits and New Guinea. Dr. Strong will be responsible further for the geographical and geological observations which it is part of the purpose of the expedition to carry out. The photographic work, which will include the use of the latest form of kinematograph for recording native dances and ceremonies, will be undertaken by Mr. Dunning who will also assist Major Daniels in general ethnographical researches. Since practically the whole of New Guinea is still in the Stone Age the expedition should have valuable opportunities of comparing the pathological conditions encountered with those occurring among civilised peoples, while the collaboration in the field of trained workers in anthropology, pathology, and geology cannot but make for thoroughness. The importance of such organised inquiries into the history and geography of disease can hardly be over-estimated.

GOLD MINERS' PHTHISIS.

SINCE the publication of Dr. Thomas Oliver's paper on Gold Miners' Phthisis,[1] pointing out the great mortality among Northumberland miners returning from gold mining in the Transvaal, a great deal of attention has been given to the subject and there seem to be good grounds for hoping that the conditions of working in these mines may be so improved that the disease will become as uncommon as coal miners' phthisis is in this country owing to improved conditions of ventilation and methods of working. With this object in view the Transvaal authorities have appointed a commission to inquire into, and to report upon, the health of miners and the conditions of labour in the mines, while the Chamber of Mines has offered prizes for practical suggestions as to the best means of obviating the dangers to miners caused by the inhalation of the fine dust produced by rock drills. The *Mining Journal*, in which as long ago as November, 1901, attention was drawn to the great mortality among South African gold miners and which in its issue of July 5th, 1902, contained a leading article referring to the importance of Dr. Oliver's conclusions, contains in a recent number[2] a further leading article on the subject discussing the views expressed by various speakers at a meeting of the Chemical, Metallurgical, and Mining Society of South Africa devoted to the discussion of miners' phthisis. Some difference of opinion seems to have existed amongst the speakers as to the relative importance in the production of the disease of the dust produced by the working of the drill and the fumes produced (especially nitric oxide) in the discharge of blasting powder and gelatin. That the disease is due almost entirely to the inhalation of dust there can, however, be little or no doubt. Its clinical course and pathological anatomy are identical, as shown by Dr. Oliver, with those in the well-recognised group of pneumonoconioses or dust-inhalation diseases, so admirably worked out by the late Dr. E. H. Greenhow and other observers. The dust in the gold mines is very fine and hard and arises in two ways—firstly and chiefly from the action of the rock drills, and secondly from the slow subsidence of the dust produced in blasting. The practical aspect of the question is well summarised in the leading article referred to in the following words: "Attaching, as we do, less importance to the influence of gases than some of the speakers at the meeting and more to the influence of dust, it is our duty to support the recommendation of a combination of means such as will quickly remove the gases from the mines by ventilation and at the same time allay dust, reminding our readers that to the excellent system of ventilation in the coal-pits of Great Britain is to be attributed the comparative freedom

[1] THE LANCET, June 14th, 1902, p. 1677.
[2] The Mining Journal, June 20th, 1903.

of the English collier from phthisis. In improved ventilation and in spraying lies our hope for the present, until, at any rate, these have been tried and found to be wanting." Having regard to the good results of the prevention of the inhalation of dust in the prophylaxis of lung disease in other dusty occupations it is not too much to anticipate the same good results in this case.

HOSPITAL ACCOMMODATION FOR GLANDERS.

AT the Thames Police-court on July 1st an application was made on behalf of the London Hospital inquiring if the magistrate could make an order directing the Whitechapel guardians to admit into their infirmary a man suffering from glanders. It appears that at the London Hospital, where the patient now is, there is a difficulty in isolating him and some anxiety is felt on account of the contagious and deadly nature of his disease. The magistrate said that the man was not destitute so long as he was in the hospital and it was impossible to make the order requested. Speaking generally, there does not appear to be any greater reason for "anxiety" with respect to glanders than with respect, for instance, to hydrophobia. In our opinion the London Hospital is the most suitable place for the patient in the meantime and in the event of the disease assuming the chronic form the question of his transfer to the Poor-law infirmary could be considered on a future occasion.

THE JENNER INSTITUTE OF PREVENTIVE MEDICINE.

WE place over these remarks a title which it seems will soon cease to exist. It may be remembered that the Jenner Institute of Preventive Medicine was originally called "the British Institute of Preventive Medicine" and that it changed its title when it became the depository of the sum of money subscribed by the public as a memorial to Edward Jenner, the discoverer of vaccination. The change has led to a curious difficulty. A manufacturer of calf lymph, whose premises are in the locality of those of the institute and whose agents are Messrs. Allen and Hanbury, calls his manufactory the "Jenner Institute for Calf Lymph" and was using Jenner's name as a hall-mark to his wares before the British Institute of Preventive Medicine altered its title. The Jenner Institute of Preventive Medicine accordingly entered into an arrangement not to manufacture calf lymph, as it seemed impossible to do so without causing confusion in the public mind, while an attempt to purchase the manufacturer's prior right to the title ended in failure. The position has now become very difficult for the public body which finds itself credited in general opinion with the manufacture of wares over which it has no control—wares, moreover, which it ought to be able to turn out and cannot. The Jenner Institute of Preventive Medicine has therefore decided to omit the name of "Jenner" from its title, which will leave its laboratory free to manufacture calf lymph and antitoxins without fear of the products being confounded with those of a private manufacturer. At a meeting held on Tuesday last, June 30th, at St. George's Hospital, this decision on the part of the authorities of the institute was very properly made known to the committee for the Jenner Memorial, for that committee had handed over to the British Institute of Preventive Medicine the sum collected from the public upon the understanding that the name of Jenner should be associated with that of the Institute. We understand that the committee for the Jenner Memorial is thoroughly satisfied that the step to be taken by the Jenner Institute of Preventive Medicine in omitting the name of Jenner from its title is unavoidable, and the money subscribed to the Jenner Memorial will probably now be employed in founding a scholarship, while the institution will revert to its former title—the British Institute of Preventive Medicine. The duty of keeping the name of Edward Jenner prominently before his countrymen will thus devolve upon the single efforts of that energetic little body, the Jenner Society.

THE DISTRIBUTION OF PLAGUE.

As regards the Cape Colony the medical officer of health of the Colony states that for the week ending June 6th the condition of the various places mentioned below was as follows. At the quarantine station, Saldanha Bay, the 2 Asiatic males from the s.s. *Nevasa* were discharged recovered during the week and the plague hospital was closed. At Port Elizabeth 9 cases of plague have been discovered during the week—namely, 1 European male on June 1st; 1 European female, 1 native male, and 1 native female on June 2nd; 1 native male and 2 native females (all of whom were found dead) on June 3rd; and 1 European female and 1 coloured male on June 6th. At the plague hospital 1 native male and 2 native females died during the week; 1 European male and 2 native males were discharged recovered, leaving 12 cases under treatment. Plague-infected rats continued to be found in the town. At East London no cases of plague have been discovered during the week. At the plague hospital 6 cases remain under treatment. Plague-infected rats continue to be found in the town. At King William's Town 5 cases of plague have been discovered during the week—namely, 1 European female and 1 coloured male on June 1st, 1 native male (found dead) on June 4th, and 1 European male and 1 European female on June 5th. At the plague hospital a European male died during the week, leaving 12 cases under treatment. Dead rats continued to be found in the town. At Graaff-Reinet no case of plague and no plague-infected rats have been discovered. At Burghersdorp during the week plague-infected rats have been discovered on the premises of the police camp at Mybergh and at Queenstown plague-infected rats continue to be found on the railway premises.

PIGMENTATION OF THE MUCOUS MEMBRANE OF THE LIPS IN LEAD POISONING.

THOUGH a blue line on the gums is a well-known symptom of lead poisoning, pigmentation of the mucous membrane of the mouth is little known. Yet as long ago as 1868 Gubler wrote: "Sometimes slate-coloured blackish spots are seen on the mucous membrane of the lips and cheeks in contact with the teeth, which resemble the spots seen on hunting dogs or those of Addison's disease."[1] At the meeting of the Société Médicale des Hôpitaux of Paris on May 15th M. L. Galliard called attention to this pigmentation of the mucous membrane of the mouth which though rare would no doubt be found in a number of cases of lead poisoning if looked for systematically. A woman aged 36 years, who was exposed to white lead in her work was admitted to hospital with lead colic and swelling of the parotid glands. There was a well-marked blue line on the gums. On the internal surface of the lips was a blackish line bordered with grey which, so to speak, was a reproduction of the blue line on the gums, following exactly all its sinuosities. After four weeks' treatment the lines on the lips and gums had much diminished. On the former there was only a brownish line which would easily escape an observer not looking for it. At the following meeting of the Société Médicale des Hôpitaux of Paris M. Bertrand pointed out that M. Cras, chief naval surgeon at Brest, had described the case of a woman with advanced lead poisoning who showed in addition to the blue line on

[1] Commentaires Thérapeutiques du Codex, p. 428, Paris, 1868.

the gums a bluish colouration of the buccal mucous membrane facing the canine teeth.[2]

THE annual dinner of the Brussels Medical Graduates' Association will take place at the Trocadéro Restaurant, Shaftesbury-avenue, London, W.C., on Tuesday, July 7th, at 7 P.M. Dr. A. G. Haydon, the President, will take the chair. The honorary secretaries are Dr. Major Greenwood, 243, Hackney-road, London, N.E., and Dr. F. H. Edwards, Camberwell House, Camberwell, London, S.E., with whom all Brussels University medical graduates desiring to attend should communicate without delay.

A SPECIAL court of the governors of the Royal Orthopædic Hospital will be held in the board room at 15, Hanover-square, London, W., on Wednesday next, July 8th, at 4 P.M., to consider a scheme for amalgation with the National Orthopædic Hospital. The public will certainly share with the medical profession the feeling that such an amalgamation is right, the present management of the Royal Orthopædic Hospital not having any serious claims to confidence.

AT a meeting held at the house of Dr. F. T. Roberts, Harley-street, W., on June 29th, Dr. G. V. Poore was presented with a piece of plate and a testimonial from his colleagues on the Faculty of Medicine and Medical Committee in recognition of his valuable services as professor of medicine at University College and as physician to University College Hospital.

THE sixty-second annual meeting of the Medico-Psychological Association of Great Britain and Ireland will be held in London on Thursday and Friday, July 16th and 17th, at the rooms of the association, 11, Chandos-street, Cavendish-square, London, W., under the presidency of Dr. Ernest W. White. The meeting will commence at 11 A.M. on the Thursday.

THE provincial meeting of the Incorporated Society of Medical Officers of Health will be held at the County Hall, Wakefield, on Saturday, July 11th, at 11.30 A.M. The Mayor of Wakefield, Mr. Alderman Brotherton, M.P., has invited those attending the meeting to a luncheon at the town hall at 1 P.M.

THE distribution of prizes to the students of the Royal Dental Hospital of London will take place on Friday, July 17th, at 8 P.M., in the Royal Institute Galleries, Piccadilly. Sir Edward Carson will preside and a conversazione will also be held.

DEATH CERTIFICATION: FURTHER APPEAL TO THE GOVERNMENT.

IN a leading article in THE LANCET of April 11th, p. 1041, we drew attention to a question in Parliament recently addressed to the President of the Local Government Board by Sir Walter Foster on the subject of death certification, his object being to extract if possible a definite official promise that steps should be taken without further delay to give effect to the chief recommendations of the select committee of 1893, which we briefly summarised in the above-mentioned article. Mr. Long's reply to that appeal having been wholly unsatisfactory from the point of view both of public health administration and of disease registration, we felt constrained at the time to express our regret that the Government should have again had recourse to the now familiar excuse of "pressure of public business," in order to avoid grappling with an acknowledged evil which has been well stated to be a standing menace to the public health and safety.

In Committee of Supply on June 11th Sir Walter Foster once more returned to the charge and on that occasion he was well supported, amongst others, by Dr. R. Farquharson who not only pressed upon the Government the necessity of carrying out by prompt legislation the recommendations of the select committee but even went so far as to state plainly that the members of the staff of the Local Government Board are both overworked and underpaid. The latter statement we believe to be fully justified by the facts and we trust that the committee to which has been referred the important question of redistributing administrative work amongst the several State departments concerned will devise a means of dealing effectually with this predicament.

Sir Walter Foster, in the course of an earnest appeal, put the case forcibly but temperately before the committee. Having reviewed the arguments he had fruitlessly addressed to the House on a previous occasion concerning the general question of the disposal of the dead and concerning the inadequacy of existing legal provisions for the protection of human life, Sir Walter Foster invoked the attention of Parliament, and through it the attention of the medical profession and of the public, to certain additional facts and considerations that have recently come to his knowledge. By the rules of debate in Committee of Supply he was debarred from animadverting on the neglect of the Government to legislate in accordance with the representations of the select committee above referred to and was obliged to confine his remarks exclusively to matters of "administration." That there is no lack of material for that purpose will be clear from what follows.

The House of Commons is now informed, on the authority of one of its Members, that certain of the larger municipalities, both in England and in Scotland, despairing of needful support from the common law, have resolved to deal for themselves with the question of death certification. On the advice of their medical officers of health the local authorities of Manchester, Glasgow, and Edinburgh have for some time instituted systematic inquiry by their own officers into the circumstances attending the uncertified deaths of persons in their respective jurisdictions, the methods and details of such inquiries necessarily varying according to local requirements. In Manchester (and unless we are mistaken in Salford also) the medical officer of health, on hearing from the registrar of the death of a person who during his or her last illness had not received medical attendance, sends a sanitary inspector or female health visitor to inquire into the circumstances attending the death. This inquiry, which is purely an administrative one, frequently leads, we are told, to the exposure of fraud in connexion with life insurance and sometimes even to the detection of crime, in which latter case the matter is referred to the coroner for further investigation. In Edinburgh and Glasgow the reference is to the procurator-fiscal, whose duties in Scotland are somewhat analogous to those of the coroners in England.

The attention of the Committee was once again directed to the dangers attending unqualified practice. In certain parts both of England and Scotland a large number of deaths are registered on the certificates of unqualified persons. Although these certificates are not regarded as legal authentication of the cause of death, nevertheless they are practically effectual for securing burial; consequently by the virtual legalisation of this custom the door is opened wide for the commission of crime. The somewhat notorious case of the county of Durham was cited where in consequence of unqualified medical practice infectious disease constantly escapes notification and in this way the spread of infection was encouraged. A year or two ago the Durham county council formally called the attention of the Registrar-General to this fact in the interests of the public health and that official at first very properly issued instructions that all uncertified deaths should be referred to the coroner before registration. How it happened that only a few months afterwards this salutary instruction was revoked we are not told, but the result is that in the county of Durham, or in certain parts of it, unqualified practice is now the rule rather than the exception. Another striking instance was related to the Committee as follows. A gentleman who was known by his family, as well as by his medical attendant, to be the subject of heart disease, died suddenly in London and the medical attendant, at the request of the survivors, was willing to certify to that effect. Suspicion, however, having been aroused, a post-mortem examination ensued, by means of which a

[2] Archives de Médecine Navale, 1875, p. 139.

bullet wound was discovered in the region of the heart. The gentleman had died by suicide. Cases like the above, as Sir Walter Foster remarked, open up a whole vista of evidence to show the way in which people with chronic disease might be got rid of, sometimes by their own action and sometimes by the criminal action of others. Mr. Long's attention was further drawn to the fact that in a considerable number of instances in which medical certificates were not forthcoming burial was permitted after informal inquiries directed by the coroner. Unfortunately these inquiries were not generally made by the coroner himself in the form of an inquest; very often they were made by the coroner's officer—a policeman—who was seldom competent to decide whether a person had met his death by fair or by foul means. These inquiries, therefore, were unsatisfactory.

Equally unsatisfactory also, in some cases, were the verdicts of coroners' juries. The members of the Water Gas Committee, appointed by the Home Secretary a year or two ago, especially drew attention to this matter by observing in their report that "they were so much impressed with the insufficiency and untrustworthiness of the statistics relating to particular causes of mortality which could be gathered from the returns of the verdicts of coroners' juries that they ventured to strongly recommend that some steps should be taken to secure that those verdicts should lend themselves more readily to a clear classification by the Registrar-General." They went on to recommend further that "where the coroner was in possession of a medical certificate or where medical evidence was taken at the inquest, a copy of the certificate or an abstract of the evidence should be appended to the coroner's certificate when it was sent to the Registrar-General."

Upon this point we feel bound to add to Sir Walter Foster's contentions our own emphatic protest against the further continuance of a practice which we cannot regard as otherwise than scandalous. The official reports show that about 6 per cent. of the deaths occurring in England and Wales from year to year are made the subject of inquests by coroners. A large proportion of the persons dying in England have happily been attended in their last moments by a medical practitioner—a merciful provision which in this country is invariably secured by the Poor-law for the very poor. The State demands from qualified medical men the giving of a certificate of the cause of death in every case ending fatally under their care, and this it requires not as a voluntary act but as a statutory duty enforceable under penalty and without payment of any kind. How comes it, then, we ask, that a large number of the medical certificates exacted from a hard-working profession are thus systematically diverted from their legitimate purpose at the discretion of officials, very few of whom can reasonably be expected to judge rightly of their value as a means of preventing further serious disease and loss of life?

Of the arguments that Sir Walter Foster adduced in support of his renewed appeal for further legislation we fully approve, and this in the interests of the public generally even more than in those of our own profession. Mr. Long's reply to the appeal was of that discouraging character to which we are unfortunately accustomed in matters concerning the public health and safety. Backed as the Government is by an overwhelming majority in the House of Commons, he finds it easy to silence criticism by the familiar argument based on the probable increase of expenditure as well as by recounting the practical administrative difficulties which surround legislation in a matter of this kind. All that could be extracted from the President of the Local Government Board was the stereotyped intimation that Sir Walter Foster might rely on his good offices *in the event* of his seeing his way to an amendment of the law in the direction indicated.

VACCINATION EXPENDITURE.—At the meeting of the Westbury-on-Severn board of guardians held on June 23rd it was stated that under the contract the average yearly payment of fees to the five public vaccinators of the union during the past four years was £250, whilst if the minimum fees fixed by the Local Government Board had been adopted in the contracts the sum would have been only £117. The guardians considered that the public vaccinators' salaries should be reduced, and accordingly notice was given that at the next monthly meeting of the board the rescission of the contracts would be moved, unless in the meantime an amicable arrangement had been arrived at.

METROPOLITAN HOSPITAL SUNDAY FUND.

IT is with much gratification that we are able to announce that the collections for the Metropolitan Hospital Sunday Fund this year will, in spite of the adverse conditions under which they were made, fall but very slightly short of those of last year, thanks to the ready response of the clergy of all denominations to the Lord Mayor's appeal to them to make an additional collection on the Sunday following the exceedingly wet one fixed for the usual sermons and collections. It is, of course, very much to be regretted that there should be any falling away: money was never more urgently needed for our hospitals and dispensaries than at the present time; but the many friends of the Fund will be relieved to find that any serious deficit as compared with last year is now happily averted. As one instance of the falling-off of contributions owing to the weather it may be mentioned that a well-known church sent in £400 less this year than last; and as an instance of the excellent results of the additional appeal made on the following Sunday by the clergy may be cited a church where the collection was advanced from £134 to £217.

The amount received at the Mansion House up to Wednesday morning was £40,000.

The following are some of the principal amounts which have been received additional to those already announced in THE LANCET:—

	£	s.	d.
Parish of St. Peter's, Eaton-square	618	18	0
St. Peter's, Vere-street	586	0	0
St. Jude's, South Kensington	555	0	0
St. Paul's, Knightsbridge, with St. Mary's, Graham-street	302	0	0
St. Paul's, Portman-square	271	0	0
Wimbledon Churches	262	0	0
St. George's, Hanover-square	256	0	0
Holy Trinity, Tulse-hill	232	0	0
St. Barnabas, Addison-road	217	0	0
St. Stephen's, Gloucester-road	205	0	0
St. Marylebone Parish Church	194	0	0
Holy Trinity, Knightsbridge	180	0	0
St. Alban's, Streatham	166	0	0
St. Peter's, Brockley	162	0	0
Christ Church, Gipsy-hill	145	0	0
Blackheath Congregational Church	142	0	0
St. Mary's, Aldermary	109	0	0
Immanuel, Streatham Common	103	0	0
Victoria-park Christian Evidence Association	102	0	0
All Souls', Langham-place	100	0	0
Regent's-square Presbyterian Church	91	0	0
St. Luke's, Chelsea	82	0	0
St. Michael's, Blackheath	85	0	0
Christ Church, Hampstead	84	0	0
Heath-street Baptist Chapel, Hampstead	62	0	0
St. Stephen's, Ealing, and Mission Church	71	0	0
Chapel Royal, Hampton Court	41	0	0
St. Olave's, Woodberry Down	45	0	0
All Saints', Nottingham	47	0	0
Magdalen Hospital Chapel, Streatham	37	0	0
St. Paul's, Wimbledon-park	41	0	0
All Saints', Hatcham	58	0	0
St. George's, Tufnell-park	35	0	0
St. Mildred's, Lee	45	0	0
Acton Parish Church	44	0	0
St. Mary's, Monken Hadley	47	0	0
Stamford-hill Congregational Church	98	0	0
St. Augustine's, Honor Oak-park	51	0	0
St. Luke's, West Holloway	47	0	0
St. Matthias's, Earl's-court	36	0	0
Allen-street Congregational Church, Kensington	73	0	0
St. Matthew's, Denmark-hill	70	0	0
Holy Trinity, Hampstead	96	0	0
Holy Trinity, Paddington	91	0	0
St. John Evangelist, Penge	75	0	0
St. Margaret's, Lee	79	0	0
Christ Church, Crouch-end	67	0	0
Aldenham Parish Church	67	0	0
St. George's Chapel, Albemarle-street	63	0	0
Hendon Parish Church	48	0	0
St. John's, Bromley, Kent	47	0	0
St. John's, Redhill	47	0	0
St. John Evangelist, Westminster	43	0	0
St. Matthew's, Ealing	55	0	0
Christ Church, Brondesbury	52	0	0
St. Augustine's, Kilburn	47	0	0
St. Mary Magdalen, Wandsworth	46	0	0
St. John's, Notting-hill	50	0	0
St. John's, Deptford	69	0	0
Dutch Church, Austinfriars	49	0	0
St. Mary Magdalen, Munster-square	52	0	0
SS. Barnabas and Matthew, Clapham-common	43	0	0

MEDICINE AND THE LAW.

Oysters unfit for Human Food.

ON June 23rd an application was made at the Mansion House police-court by Mr. W. H. May, the chief sanitary inspector of the City, for the destruction of two sacks containing 1600 oysters. These had been found on the premises of Mr. Ullmann, oyster merchant, at whose shop, 34, Fish-street Hill, 12 oysters had been purchased for analysis. Several of the oysters thus procured had been found by Dr. Klein to contain bacillus coli communis and other bacteria, but it was urged in defence that these had come from a storage-pit, whereas those sought to be destroyed came straight from the beds. In view of this statement the alderman came to the very proper conclusion that a further analysis should be made both by Dr. Klein and by anyone whom Mr. Ullmann might employ for the purpose and he adjourned the case. On June 25th the further hearing of the summons took place and evidence was given that a dozen oysters had been taken from each of the sacks and submitted to bacteriological examination, with the result that of the 24 oysters thus obtained 11 were found to contain dangerous bacilli. The analysis conducted on behalf of Mr. Ullmann practically coincided with that made on behalf of the City authorities and the order that the oysters should be destroyed followed as a matter of course. The alderman accepted the statement made on behalf of Mr. Ullmann that he had taken every precaution and had had no intimation that any oysters sold by him had ever proved harmful. It was stated that those complained of in the first instance came from the South Deep Pit at the mouth of the river Swale and those in the sacks from the South Deep beds in the same neighbourhood.

Margarine sold as Butter.

A grocer named Leaman was summoned on June 19th at the West London police-court for selling margarine as butter. By way of defence he took out a summons against his assistant who actually conducted the sale for selling margarine as butter without his employer's sanction or knowledge and his counsel asked that the two summonses should be heard at the same time. For this course he had no legal authority but he pressed for it on the ground of justice, to which Mr. Lane, the magistrate, replied with some scorn that when an advocate began to talk of justice, eternal justice, it merely meant that he had no law on his side. In the end the grocer was convicted and the court was then informed of several previous convictions against him. These the defendant's counsel undertook to explain, but the magistrate declined to hear such explanations. He said that he had seldom heard a worse or, indeed, a more impudent case and he inflicted a fine of £30, with 12*s.* costs. Another defendant convicted at the same court, on the same day, of a similar offence, after four previous convictions, was fined £20, with 12*s.* 6*d.* costs. The Fulham Borough Council and its inspectors should find their hands strengthened in their efforts to preserve the purity of the food of the people by substantial penalties such as these. The maximum penalty under the Margarine Act is a fine of £100 or three months' hard labour without the option of a fine.

The Revolver at the Old Bailey.

As usual, a sessions of the Central Criminal Court has afforded a number of instances of the practice of carrying revolvers indulged in without restraint by the classes of the community least fit to be trusted with dangerous weapons. A man found guilty of shooting with intent to do grievous bodily harm was sentenced to three years' penal servitude. Another had gone to the house of his mother-in-law to see his wife who was not living with him and had shot the mother-in-law dead. The defence was raised that he was drunk and only fired the pistol to frighten his wife. He was acquitted of murder but found guilty of manslaughter and sentenced to ten years' penal servitude. In a third case a medical man, Mr. W. H. P. Fox of 122, Clapham-road, whose night bell had been rung, spoke down a speaking-tube and was informed that the person below was a messenger who had come to summon him and who would like to have an interview with him before he went to attend to the case. On Mr. Fox going down and opening the door the prisoner, a coachman whom he had discharged, rushed at him with a revolver in his hand. In the struggle which took place the pistol was not discharged and the prisoner afterwards stated that he intended to frighten his former employer, not to kill him. Be this as it may, Mr. Fox had to wrestle with his assailant for several minutes before the whistle blown by Mrs. Fox procured assistance, and whether he was "frightened" or not both he and his wife are to be congratulated on having brought a very alarming and dangerous adventure to a safe conclusion. The man who made the attack was punished with 12 months' hard labour. The advantages of free trade are not very obvious where cheap pistols are concerned, and the imposition of duties heavy enough to banish them from the country would protect life and save many foolish persons from long terms of imprisonment.

Unsuccessful Action against a Medical Man.

On June 18th the Lord Chief Justice directed a jury to return a verdict for the defendant in an action for slander brought by Mrs. Helen Elizabeth Tute against Dr. L. W. Sedgwick. The plaintiff, who had consulted the defendant as her medical adviser, had afterwards accused him of regarding her with disfavour on account of her being separated from her husband and sought an interview with him, in the course of which she appears to have thought that he said that she was not an honest woman. Dr. Sedgwick, in remonstrating with her, had apparently made the observation that a question she had put was not an honest question, or used some expression to that effect, and the "publication" of the alleged slander consisted in a statement with regard to this made to another medical man whom Dr. Sedgwick had called in to help him in pacifying the plaintiff. In such circumstances the Lord Chief Justice ruled that what was said was spoken under conditions which rendered it a privileged communication and expressed the opinion that the action ought never to have been brought.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

The Borough of Cheltenham.—The difficulty of obtaining a proper control over the meat-supply is well illustrated by the experience of Cheltenham as told by Dr. J. H. Garrett in his current annual report. In 1896 the town council obtained a Provisional Order which was apparently confirmed by Parliament and which gave power to close slaughter-houses which, in the opinion of the council, were "from their situation or construction injurious to the public health." A further condition of closure was compensation both to occupier and owner. Unfortunately the application of the Order has not proved a success as it has resulted in an increased and disproportionate value being placed upon registered slaughter-houses and has thus caused those interested in them to cling to them with great tenacity. Moreover, the Order has had the effect of increasing the number of butchers on the town council and the butchers and their supporters are strong upon the public health committee. As Dr. Garrett shows, either all meat must be inspected before being sold or animals furnishing the meat must be killed in an abattoir where both the animals and the meat can be inspected. It is to be deplored that the public do not take a greater interest in this question and refuse to buy meat which is not stamped as having been killed in the public abattoir; but Dr. Garrett does all that he can towards this end by publishing in his report the names and addresses of those who used the abattoir during 1902.

Bridlington Rural District.—Mr. William A. Wetwan, the medical officer of this district, in discussing the provision of sanatoriums for pulmonary tuberculosis, addresses some remarkable observations to the district councillors. He says: "Do you propose to cast in your lot with the providers of barrack-like sanatoria whose chief result seems to be the isolation of tuberculosis, apart from cure, at a very considerable capital outlay, or do you not think it better to turn every house in your district into a model sanatorium for prevention by making its windows a reality, so that sunshine ..... may reach all interior parts, its fireplaces and chimneys such that fires may be lighted without poisoning

the occupants with ready-made 'coal tar derivatives' nor at other times giving admittance to an avalanche of snow and a deluge of rain—roofs that will keep out the wet and floors properly paved—the garden a real fresh-air space and not merely a dumping ground for nightsoil, nor the so-called well anything but a collection of topwater and sewage percolations. Clean your villages, renovate your houses, seek fresh sources for your water-supply and you will check not merely the spread of consumption but of many other infectious diseases. The toll in life will be smaller, the cost in money less, and the loss of time, prolonged and wearying sickness infinitely more curtailed than by relegating these matters to parish councils' deliberations on building sanatoria." Although this picture is somewhat over-painted there is much which is worthy of consideration in it. The building of sanatoriums must not lead to neglect of public health duties in other directions.

Metropolitan Borough of Stoke Newington.—After an experience of two years of the voluntary notification of pulmonary tuberculosis Dr. Henry Kenwood does not speak very enthusiastically of the results, since during 1902 only 26 notifications of this disease were received. He thinks that compulsory notification might now be applied in the borough. Dr. Kenwood, however, condemns the modern tendency "to exaggerate the comparatively slight infectivity of the disease." There is a risk, he fears, that such an exaggeration may lead to hardship in the treatment of the patient. As regards sanatoriums Dr. Kenwood advocates the provision of institutions for advanced and hopeless cases among the poor.

The Borough of Bury.—Dr. Albert E. Brindley embodies in his last annual report photographs of what appears to be an admirable abattoir, the erection of which has recently taken place in Bury. The buildings embrace public and private slaughter-halls, as also meat stores and a refrigerating department, the meat being conveyed between the abattoirs and the refrigerating building on overhead runners along a glass-covered roadway. Provision is also made for isolating and slaughtering suspected cattle, for the manufacture of ice, and for the treatment of hides and skins. We cordially congratulate Bury upon its acquisition and we hope to see neighbouring towns following the example. Bury will soon be able to exercise proper control over at any rate a large portion of its meat-supply.

Clacton Urban District.—Dr. J. W. Cook reports that the voluntary notification of pulmonary tuberculosis which was introduced in this district last year has not proved altogether a success, as the medical practitioners have not taken full advantage of it.

Lexden and Winstree Rural District.—A new well has been recently bored at Rowhedge in this district and water has been obtained after sinking about 140 feet into the chalk. During the high tides which ascended the estuary of the Colne it was rumoured that the water in the well had risen two feet and that the water had become saline in consequence. Dr. J. W. Cook was able, however, to show that the water had only risen a few inches and that the amount of chlorine was unchanged. Several of the cases of enteric fever which occurred in this district were attributed by the medical officer of health to polluted or "decaying" oysters, but we fail to see how decaying oysters, unless they were at the same time specifically infected, could cause enteric fever. Dr. Cook thinks that there is much to be said for the oyster merchant, as in many instances his layings have been polluted by unpurified sewage. Certainly the oyster merchant is in a very difficult position when a new sewer outfall is laid near to his oysters.

The Borough of Bootle.—Typhus fever is becoming so rare in this country that it may certainly be said that the vast majority of the younger generation of medical men have never seen a case, and an outbreak of this disease which occurred in Bootle in 1902 serves to show how easily it may be overlooked. No fewer than 12 cases (four of which ended fatally) occurred before the nature of the disease was determined and there were 14 subsequent cases with four additional deaths. As many as 10 of the total number were taken from one house and eight of these were members of the same family who lived together in an attic provided only with a skylight which would not open. Mr. T. W. Naylor Barlow lays stress upon the very evanescent nature of the rash in some cases of typhus fever, a fact which in his view explains why the disease is so frequently overlooked. Mr. Barlow accentuates the vast importance of fresh air as a daily necessity and he suggests that there would be no cases of typhus fever if windows were kept open two hours in the morning and two hours in the afternoon.

Gorton Urban District.—Mr. A. W. Martin describes in his annual report a somewhat remarkable outbreak of pemphigus among newly born children. It was found that several infants who had been attended by the same midwife were attacked with pemphigus and subsequently it was found that no fewer than 14 cases had occurred, all of which had been attended by the same midwife. Five of the cases proved fatal. On investigation being made it was discovered that two of this midwife's own children were suffering from a precisely similar eruption on their faces, the dates of attack pointing to the conclusion that these children had derived infection from some of those attended by the mother in her capacity of midwife, although the majority of the patients were infected from the children of the midwife. This woman appears to have neglected proper precautions as regards cleanliness. In connexion with this same subject of acute pemphigus we notice that Dr. J. H. Crocker, the medical officer of health of Richmond, Surrey, refers to an outbreak of 17 cases with eight deaths which occurred in Richmond during 1902. All these cases had been washed or attended by the same assistant midwife. Her practice was stopped and no more cases occurred.

Chesterfield Rural District.—In certain parishes in this district Dr. Herbert Peck found lead in the public water-supply in instances in which the water had not been freely drawn the same day. Two deaths were ascribed to lead poisoning while many cases of poisoning in a minor degree were reported. Apparently the water, while in the reservoirs, contains no lead, but it possesses the power of acting upon the lead pipes with which it is brought in contact. Dr. Peck advised that the feeders supplying the most acid waters should be diverted from the common supply and that the chalk in the beds over which the principal feeders flow should be renewed more frequently. He also advised the addition of lime to the water already in the reservoir.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 9062 births and 4137 deaths were registered during the week ending June 27th. The annual rate of mortality in these towns, which had been 14·3, 13·9, and 14·3 per 1000 in the three preceding weeks, was again 14·3 per 1000 last week. In London the death-rate was 13·5 per 1000, while it averaged 14·7 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 5·3 in Ipswich, 5·4 in Handsworth and in West Hartlepool, 5·7 in Tottenham, 6·6 in East Ham, 7·4 in Bournemouth, 7·9 in Hastings, 8·6 in Willesden, and 8·7 in Brighton; the highest rates were 18·8 in Birkenhead, in Liverpool, and in Bury, 18·9 in Warrington, 19·1 in Sheffield and in Rotherham, 20·7 in Oldham, 22·1 in Rochdale, 24·4 in Coventry, and 27·2 in Great Yarmouth. The 4137 deaths in these towns last week included 429 which were referred to the principal infectious diseases, against 396, 404, and 415 in the three preceding weeks; of these 429 deaths 137 were referred to measles, 84 to whooping-cough, 79 to diarrhœa, 48 to scarlet fever, 44 to diphtheria, 24 to "fever" (principally enteric), and 13 to small-pox. No death from any of these diseases was registered last week in Brighton, Bournemouth, Southampton, Reading, Ipswich, Plymouth, Hanley, Kings Norton, Bury, Barrow-in-Furness, Huddersfield, Stockton-on-Tees, or South Shields, while the highest death-rates from the principal infectious diseases were recorded in Great Yarmouth, Coventry, Warrington, Salford, Oldham, Sheffield, Rotherham, and Middlesbrough. The greatest proportional mortality from measles occurred in Coventry, Stockport, Sheffield, Middlesbrough, and Merthyr Tydfil; from scarlet fever in Rotherham; from diphtheria in Great Yarmouth; from whooping-cough in Oldham and Rotherham; and from diarrhœa in Preston. The mortality from "fever" showed no marked excess in any of the large towns. Three deaths from small-pox were registered in Oldham, three in Bradford, two in Liverpool, two in Gateshead, one in London, one in Leicester, and one in Middlesbrough, but not one in any other of the 76 towns. The Metropolitan Asylums hospitals contained 67 small-pox patients on Saturday last, June 27th, against 72, 64, and 70 on the three preceding Saturdays; seven new cases were admitted during the week, against 24, nine, and 16 in the

three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1785, 1710, and 1649 at the end of the three preceding weeks had further declined to 1644 at the end of last week; 234 new cases were admitted during the week, against 210, 145, and 170 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 171, 141, and 134 in the three preceding weeks, rose again last week to 150, but were 24 below the number in the corresponding period of last year. The causes of 40, or 1·0 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Nottingham, Bradford, Newcastle-on-Tyne, and in 50 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, St. Helens, Sunderland, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 18·2, 17·5, and 17·0 per 1000 in the three preceding weeks, increased again to 19·1 per 1000 during the week ending June 27th, and was 4·8 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 12·0 in Aberdeen and 13·1 in Leith, to 21·3 in Glasgow and 21·8 in Greenock. The 627 deaths in these towns included 28 which were referred to whooping-cough, 16 to diarrhœa, 13 to measles, four to diphtheria, three to scarlet fever, and one to "fever," but not one to small-pox. In all, 65 deaths resulted from these principal infectious diseases last week, against 65, 49, and 47 in the three preceding weeks. These 65 deaths were equal to an annual rate of 2·0 per 1000, which was 0·5 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 25, 20, and 16 in the three preceding weeks, rose again last week to 28, of which 15 occurred in Glasgow, six in Edinburgh, and five in Greenock. The deaths from diarrhœa, which had been 18, 20, and 14 in the three preceding weeks, rose again to 16 last week and included nine in Glasgow, three in Dundee, two in Aberdeen, and two in Paisley. The fatal cases of measles, which had been nine, three, and nine in the three preceding weeks, further rose last week to 13, of which nine were registered in Glasgow, two in Edinburgh, and two in Paisley. The deaths from diphtheria, which had been four, one, and one in the three preceding weeks, rose again to four last week, and included two in Glasgow and two in Edinburgh. The deaths from diseases of the respiratory organs in these towns, which had been 111, 75, and 73 in the three preceding weeks, rose again last week to 92, but were slightly below the number in the corresponding period of last year. The causes of 31, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had been 22·7, 22·4, and 19·7 per 1000 in the three preceding weeks, rose again to 22·3 per 1000 during the week ending June 27th. During the past four weeks the death-rate has averaged 21·8 per 1000, the rates during the same period being 13·2 in London and 17·5 in Edinburgh. The 162 deaths of persons belonging to Dublin registered during the week under notice showed an excess of 19 over the number in the preceding week and included 13 which were referred to the principal infectious diseases, against ten, nine, and 11 in the three preceding weeks; of these four resulted from measles, two from small-pox, two from diphtheria, two from whooping-cough, two from "fever," and one from diarrhœa, but not one from scarlet fever. These 13 deaths were equal to an annual rate of 1·8 per 1000, the death-rates last week from the same diseases being 1·4 in London and 1·7 in Edinburgh. The fatal cases of measles, which had been two, none, and one in the three preceding weeks, increased last week to four. The deaths from small-pox, which had been three, one, and three in the three preceding weeks, declined again to two last week. Two fatal deaths from diphtheria were registered last week, against none in any of the six preceding weeks. The deaths from whooping-cough, which had been one, five, and six in the three preceding weeks, declined again to two last week. The fatal cases of "fever" numbered two last week, against three, two, and none in the three preceding weeks. The 162 deaths in Dublin last week included 28 of children under one year of age and 35 of persons aged 60 years and upwards; the deaths of infants showed a slight decline, while those of elderly persons were considerably in excess of the number in the preceding week. One inquest case was registered, and 65, or more than 40 per cent., of the deaths occurred in public institutions. The causes of 13, or 8·0 per cent., of the deaths in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: D. T. Hoskyn to the *Mersey* and S. Keays to the *Albion*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel S. C. B. Robinson has arrived at Colchester and assumed medical charge of officers, women, and children and the Female Hospital. Major R. J. D. Hall is transferred from the Bombay District to the Scinde District and appointed Officer Commanding Station Hospital, Hyderabad. Major H. A. Haines takes over the charge of the Station Hospital, Sheffield.

VOLUNTEER CORPS.

Electrical Engineers: Surgeon-Lieutenant J. A. Masters to be Surgeon-Captain. Dated June 27th, 1903. *Rifle:* 8th Volunteer Battalion the Royal Scots (Lothian Regiment): Walter Petrie Simpson to be Surgeon-Lieutenant. Dated June 27th, 1903. 4th Volunteer Battalion the Cameronians (Scottish Rifles): Surgeon-Lieutenant J. S. McKendrick to be Surgeon-Captain. Dated June 27th, 1903. 4th Volunteer Battalion the East Surrey Regiment: The undermentioned Surgeon-Lieutenants to be Surgeon-Captains:—T. M. Morton (dated June 27th, 1903) and W. H. F. Young (dated June 27th, 1903). 2nd Volunteer Battalion the Hampshire Regiment: Surgeon-Captain A. B. Wade to be Surgeon-Major (dated June 27th, 1903) and Surgeon-Lieutenant O. T. Stephenson to be Surgeon-Captain (dated June 27th, 1903). 6th (Fifeshire) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Major J. Mackay resigns his commission. Dated June 27th, 1903. 4th (Nottinghamshire) Volunteer Battalion the Sherwood Foresters (Nottinghamshire and Derbyshire Regiment): Harry Stallard to be Surgeon-Lieutenant. Dated June 27th, 1903. 1st Volunteer Battalion the Duke of Cambridge's Own (Middlesex Regiment): Surgeon-Captain G. A. Cohen resigns his commission. Dated June 27th, 1903. 1st Volunteer Battalion the Prince of Wales's (North Staffordshire Regiment): James McClew to be Surgeon-Lieutenant. Dated June 27th, 1903.

VOLUNTEER OFFICERS' DECORATION.

The King has conferred the Volunteer Officers' Decoration upon the undermentioned officers of the Volunteer Force who have been duly recommended under the terms of the Royal Warrant dated July 25th, 1892:—*North-Eastern District: Rifle:* 3rd Volunteer Battalion the Leicestershire Regiment: Surgeon-Lieutenant-Colonel Francis John Walker. *Scottish District: Artillery:* 1st Forfarshire Royal Garrison Artillery (Volunteers): Surgeon-Major William Chalmers-Cowan. *Rifle:* 5th Volunteer Battalion the Royal Scots (Lothian Regiment: Surgeon-Major James Allan Gray. *Woolwich District: Artillery:* 3rd Kent (Royal Arsenal) Royal Garrison Artillery (Volunteers): Surgeon-Major Arthur Henry Robinson.

BIRTHDAY HONOURS.

Among the honours conferred by the King on the occasion of the celebration of His Majesty's birthday we find the names of the following medical officers, to whom we tender our congratulations:—Order of the Bath, Military Division: The K.C.B. has been conferred upon Surgeon-General Colvin Smith, C.B., K.H.S., late I.M.S., and upon Surgeon-Major-General J. B. C. Reade, C.B., K.H.S., late A.M.S. Surgeon-General G. J. H. Evatt, A.M.S., and Surgeon-General A. Scott Reid, I.M.S., have received the honour of a C.B.

From June 29th last, visiting the Station Hospital, Devonport, will cease to be part of the duties of the field officer of

the day. A hospital visitor will be appointed weekly from the senior staff officers and he will make at least two visits during his tour of duty.

Correspondence.

"Audi alteram partem."

MEDICO-LEGAL ASPECTS OF DEATHS UNDER CHLOROFORM.

To the Editors of THE LANCET.

SIRS,—In an annotation under the above heading in THE LANCET of April 25th you make some remarks which I think suggest correspondence. Firstly, you have ventured no opinion as to the cause of death, and indeed the data do not warrant such, for they are as meagre as is usual in these cases. Still, they suggest that the man endured the very painful operation of having adhesions broken down after he had inhaled chloroform sufficiently long to count 30 aloud. Surely it is perfectly obvious to everyone with any experience that he could not in that case have been under chloroform at the time the operation was performed and must have been conscious. Is it fair to put down to the effects of chloroform a death which occurred in a man who was probably conscious? Doubtless, in the days before chloroform was discovered many deaths occurred from the painful shock of an operation. How much more severe must that shock be when it is entirely unexpected, the patient believing that he has no pain to face and not nerving himself in any way to meet it? If I am wrong in supposing that the period occupied in the inhalation of chloroform was in this case too short to admit of complete anæsthesia, there are yet some remarks which may be fairly made on the opinions of the professors who gave evidence at the time. Professor Carstairs C. Douglas is reported as stating that in these cases death is due to "syncope" and not to asphyxia. Surely respiratory failure and asphyxia are not looked upon by him as synonymous terms. Yet he cannot mean that he expects patients to be occasionally suffocated by the administrator. Professor J. Glaister, too, is stated as considering that it is possible to tell by post-mortem examination that death has occurred from cardiac syncope. This can surely only mean cardiac failure as opposed to suffocation, for it is as certain as anything can be which has been the subject of experiment that the cardio-vascular and respiratory phenomena which accompany chloroform anæsthesia pushed to a fatal ending are a gradual lowering of blood pressure, in the course of which respiration ceases before the heart stops. Now is it possible that by post-mortem examination anyone can determine whether the events which led up to death were a somewhat gradual or a sudden failure of circulation? This appears to be another instance of confusion between suffocation and gradual failure of respiration. The inaccuracy of language deprives the lessons to be learnt of all value. There seem to be two conditions under which death occurs during the administration of chloroform, firstly, those which occur during the first stage before unconsciousness has supervened, and which ought not to be put down to chloroform at all; and secondly, those which really do result from an overdose. In these last it is quite certain that the vast majority of, if not, as is probable, all, cases die in such a manner that to the administrator who is carefully watching the respiration this will give the first sign of danger, and that a sure and certain one.

I think, Sirs, that it is a pity that you have drawn comparison between practice in England and that in Scotland. I am sure it can be of no use to make this matter in any way a racial one, and in addition I do not think you have any evidence to show that in the many deaths to which you refer chloroform was given by Syme's principles. What is so urgently required is the truth quite apart from any local feelings or prejudices. But since the matter has been put in this way let me quote Dr. Frederic Hewitt in his Emeritus Lecture published in THE LANCET of Jan. 10th, 1903:—"The commencement of an operation before perfect anæsthesia has been produced is in most cases unattended by anything more than inconvenient reflex movement. There is no conclusive evidence to my mind that the circulation is specially liable to be depressed by operating in moderately deep anæsthesia. But in certain subjects, and particularly in muscular and obese patients, the commencement of an operation during moderate anæsthesia is strongly to be deprecated owing to the reflex suspension of breathing which may result. ..... It is highly probable that this state has often been erroneously regarded as primarily cardiac." Is it reasonable to suppose that by post-mortem examination even the most experienced pathologist can distinguish between these two conditions? At the same time, I do not suggest that the patient whose sad death occurred was in a state of moderately deep anæsthesia. As I have said, it is quite possible that anæsthesia was of the lightest and that consciousness was not lost. The matter is referred to in the endeavour to show the futility of any opinion based on post-mortem appearances as to whether death occurred from primary cardiac or primary respiratory failure.

You have touched on the question of measured dosage. There have appeared in your columns from time to time communications to show that anæsthesia may be produced with the expenditure of only a few minims of chloroform. Unless some such method were generally employed the dosage is really immaterial, by "dosage" being meant the amount of chloroform put on the apparatus. Chloroform is so volatile, so rapidly absorbed, and so rapidly again excreted, and the wastage is usually so enormous that the dosage is of little value as a measure of the amount of the drug actually circulating in the blood and lymph. In the case of every drug the effect has to be watched, the dose given is or should be in every case an experimental one and has to be checked by its effect. This is especially the case with chloroform, the amount of which administered has to be entirely governed by the effect produced, and it is most essential to bear in mind that if the using of measured doses gives a false sense of security and a tendency to relax care, as it possibly will, then it were far better to throw away all apparatus. I have no doubt at all that the only use of apparatus is to economise chloroform, and it has the disadvantage, besides that mentioned above, of tending to take away part of the attention of the administrator from his patient to the apparatus, an effect so strongly insisted on and deprecated by Lieutenant-Colonel E. Lawrie, I.M.S. Chloroform cannot be given safely unless the anæsthetist gives to its administration his whole, entire and undivided attention, a very short defection of which may prove fatal to his patient. Under these conditions there is no doubt that if administered on proper principles it can be given with safety.

I am, Sirs, yours faithfully,

CLAYTON LANE, M.D. Lond.,
Captain, I.M.S.

Puri, Orissa, India, May 15th, 1903.

ON THE USE OF THE ROENTGEN RAYS IN THE DIAGNOSIS OF PULMONARY DISEASE.

To the Editors of THE LANCET.

SIRS,—I have read Dr. J. F. H. Dally's paper[1] entitled "On the Use of the Roentgen Rays in the Diagnosis of Pulmonary Disease" with the greatest interest. It contains many valuable points but none of more importance than "the unilateral limitation of diaphragmatic movement," which I have found present in even the earliest cases of pulmonary tuberculosis. Curiously enough, if one examines the cases quoted in the paper side by side with Dr. Dally's table of average respiratory excursions—viz., quiet three-quarters of an inch on each side and maximum two and seven-eighth inches on the right and two and five-eighth inches on the left—we find that Case 2 and Case 8 are the only ones typical and Case 2 shows no diminution in quiet respiration. In Case 6 the limitation is very marked on the right side but very slight—viz., one-eighth of an inch—on the left, yet we have the left lung in shadow as far as the third rib with the tube placed anteriorly and as far as the second interspace with the tube posteriorly. In Case 10 it will be noticed that the maximum excursion on the left side was three inches—viz., three-eighths of an inch above the average—and two and three-quarter inches on the right side, there being a *dark* shadow on this apex and a *light* on the left as far as the

[1] THE LANCET, June 27th, 1903, p. 1800.

fourth rib. I have seen cases of quite early mischief in which no physical signs could be detected and in which the diaphragm was immobile on the diseased side in quiet respiration and its excursion in maximum did not exceed three-quarters of an inch. It would be interesting to know if tubercle bacilli were found in all of these cases. One point I have noticed which is not mentioned is the *jerky* movement of the diaphragm which is seen in some cases, probably corresponding to "cog-wheel respiration," stammering of the diaphragm.

I was particularly interested in Dr. Dally's description of the "cardio-phrenic space" and should be glad to know if he has noticed the triangular light area which is seen when the patient is looked at laterally with the light falling on the left anterior axillary fold and passing obliquely out just behind the right scapula: this space is bounded in front by the base of the heart and below by the diaphragm. This area is increased by a deep inspiration in health, but in many cases of pulmonary tuberculosis does not alter its dimensions in the deepest inspiration. The paper is one which should be studied with great care by all who are interested in the *early* diagnosis of a disease which is too often passed over until a cure is impossible and treatment can only be palliative.—I am, Sirs, yours faithfully,

STANLEY GREEN, M.B., B.S. Lond.

Lincoln, June 29th, 1903.

ACTION OF THE TIBIALIS POSTICUS AND PERONEI MUSCLES (LONGUS AND BREVIS)

To the Editors of THE LANCET.

SIRS,—These muscles have a different action according to whether they act alone or in conjunction with each other. If they act alone they either turn the foot inwards (tibialis posticus), or turn it outwards (peronei), and thus invert or evert the foot at the mid-tarsal articulation. But when they work together their action is totally different—the one muscle pulling inwards and the other two outwards balance each other as far as inversion and eversion of the foot are concerned, and they then act as extensors of the foot upon the leg; or we may speak of it as "plantar flexion" to bring it into line with "palmar flexion" of the hand on the forearm.

It is by this second combined action of the two sets of muscles that rigidity is given to the foot as a whole in the act of "tip-toeing" or of walking on the ball of the foot, and also during the act of ordinary progression. Were it not for this action, in attempting to "rise upon the toes" the foot would not form one rigid piece, so to speak, but would be loose at the tarsal and tarso-metatarsal articulations; and when the calf muscles (tendo Achillis) contracted it would be impossible to support the weight of the body on the balls of the toes as the foot would "give" at the tarsal and tarso-metatarsal joints. In other words, in order to avail oneself of the action of the soleus and gastrocnemius and to rise on the balls of the toes, the metatarsus must first be made one with the tarsus, and the elements of the latter themselves must be bound together, by the combined action of the peronei and tibialis posticus muscles.

If we look at the proximal end of the first metatarsal bone we observe that the point of attachment of the peroneus longus tendon is extremely well marked; the bone projects here after the usual manner of the point of insertion of a powerfully acting muscle, and the same may be said of the proximal end of the fifth metatarsal bone which receives the tendon of the peroneus brevis. The muscles themselves, too, especially the longus, are obviously of great power, and we might fairly suppose, *a priori*, that their function is a far more active one than would be represented by mere eversion of the foot, an action which in ordinary circumstances is not attended with the exhibition of any great amount of force and does not take place at all during ordinary progression. On the other hand, the amount of force required to produce simple extension of the foot upon the leg is very great indeed, as at every step the foot has to lift a weight of, say, some ten stones; in fact, when the body is poised on the balls of the toes the foot may be regarded somewhat in the light of a strung bow, of which the peroneals represent the string and the bony arch of the foot the wood.

If we accept this view of the action of the peroneals and tibialis posticus in ordinary progression, it becomes readily understandable that if either the peroneals or the tibialis posticus be removed from the equation, the foot will no longer be able to be used by the calf muscles as a lever to lift up the body; it will no longer be possible to go on tiptoe or even to rise from the heel at all. For if either the evertor or invertor is out of use the combined action of these muscles (as contrasted with their single action) becomes impossible, and it is only the combined action which is of service in extending the foot upon the leg. And this is precisely what happens if the peroneals have been divided and have subsequently failed to make a satisfactory reunion. The patient is unable to rise from the heel on to the ball and the foot is utterly useless for progression. That the long flexors of the toes are not concerned with extension of the foot upon the leg as in the act of standing upon tiptoe may be proved by a single experiment. If this attitude is assumed with the toes projecting free over the edge of a step they may readily be either raised or lowered by the long extensors or flexors while the attitude is still maintained. This is readily understandable when we reflect that on standing on tiptoe we stand not on the ends of the toes, but on the ends of the metatarsal bones.

We may, perhaps, compare the peroneals and tibialis posticus of the foot with the radial and ulnar flexors of the hand. In the latter case the action of the muscles as flexors of the hand upon the forearm is obvious to all at first sight and runs no risk of being overlooked. But in the case of the foot, owing to the projection backwards of the calcaneum between the muscles thrusting the tendons to one side, their significance as plantar flexors, or extensors of the foot upon the leg, tends to be masked, and their far less important function as invertors or evertors attracts most attention.—I am, Sirs, yours faithfully,

ARTHUR CLARKSON, M.B., C.M. Edin.

Kilburn Park-road, N.W.

MEDICAL DOCTRINES OF HEREDITY.

To the Editors of THE LANCET.

SIRS,—The doctrine of the actual transmission of acquired characters appears now to have been pretty generally abandoned by medical men. But the modified belief that offspring are affected by the changes produced in the parental blood and tissues by hardship, privation, or the presence of lead, alcohol, opium, or the toxins of disease, &c., is universal. It is alleged, since certain other cells of the body are undoubtedly injured, the germ cells (sperm and ova), and through them offspring, must also be injured. Though this hypothesis is intrinsically probable the reasons for doubting the truth of it appear so conclusive that I offer no excuse for calling the attention of the profession to them in the pages of THE LANCET. The subject is undoubtedly one of great practical importance and scientific interest.

1. Even if the germ cells are injured it does not follow that this injury will be perpetuated in their very remote descendants—i.e., in the body cells of the child—at a time long after the injurious agency has ceased to act. If this were true as regards cells other than germ cells there could be no real recovery from illness. For example, gland disease or injury during infancy or childhood would be perpetuated in the descendant gland cells of the adult even when the cause of the disease was removed.

2. Biologists have found that while asexual reproduction—e.g., the summer generations of aphides which are produced without the intervention of the male, or plants propagated by cuttings, grafts, and suckers—results in offspring which are almost invariably exact copies of their parents the offspring of sexual reproduction always differ more or less from their parents and from one another. Biologists have noted also that the members of a single litter (of puppies, kittens, pigs, &c.), or of a single crop of seedlings grown from the same plant during the same season (and thus reproduced under practically identical conditions) may differ vastly among themselves—may differ just as much as the members of the succeeding litters or crops. The majority of biologists have concluded, therefore, (*a*) that external agencies (nutrition, climatic influence, toxins, &c.) acting on and modifying parents have little or no influence on offspring subsequently produced; but (*b*) that the sole cause of variation in offspring is the intermixture of the dissimilar germ plasms of the male and female parent. The two parents being different from each other produce offspring which are different from both. The laws of heredity presumably are

much the same in man and the plants and lower animals. There is therefore an *a priori* presumption that among human beings all variations, favourable or unfavourable (including "degeneracy"), are due, not to external influences acting through the parents on the germ cells, but solely to sexual reproduction.

3. The changes occurring in human beings during the period of reproduction are very great, but apparently they have no influence on offspring. Certainly no one is able to distinguish the child of a boy and girl from one born to aged parents.

4. If, as is commonly alleged, alcohol and the toxins of disease circulating in the blood injure the offspring through the germs then this "degeneracy" is evidently an inborn or congenital trait and differs from other variations only in that it is caused by external influences and not by intermixture. It is what is technically known as a "variation" of germ plasms. But "variations," as contrasted with "acquirements," are known to be transmissible to future descendants. Thus, unlike mutilations, congenital abnormalities are apt to be repeated generation after generation and may by careful breeding—i.e., by mating individuals with the same variations—be rendered stable in the race. It is by preserving and accumulating variations that nature has evolved new species, and it is by this means that breeders evolve improved varieties of plants and animals. Now alcohol, opium, and many diseases have afflicted many races for thousands of years. In the case of alcohol and malaria they have been so prevalent among certain races that hardly an individual during long ages can have escaped their influence. It follows, if alcohol or toxins circulating in the parents' blood injure offspring, this "degeneracy," being inborn, must accumulate in future generations. The son will transmit his congenital defect to the grandson with an increment added by his own intemperance or disease. The grandson will transmit this greater defect to the great-grandson with an additional increment—and so on, till the race, growing more and more degenerate, at last becomes extinct. This racial degeneracy due to alcohol and disease would be inevitable under the conditions and has in fact been alleged by numerous writers. On the other hand, if the hypothesis is wrong and alcohol, toxins, and other deleterious agencies do *not* affect offspring, it is evident there will be no degeneracy. On the contrary, the race, by the weeding out of its weaker members, will tend continually to grow stronger. We will have then a simple case of natural selection. In the case of alcohol the removal of drunkards—i.e., those most inclined to drunkenness—will tend to render the race more temperate; in the case of disease the elimination of the least resistant to any disease will tend to render the race more resistant to that particular disease. Here, again, the result will be inevitable. We have thus a simple but entirely conclusive means of testing the doctrine of degeneracy.

Before applying the test, however, it should be noted that we are really dealing now with two fundamentally opposed and quite incompatible doctrines of heredity and therefore of evolution. Natural selection implies evolution through the operation of injurious agencies which, by destroying the unfittest, raise the "racial mean" by the gradual accumulation of favourable variations in successive generations. But if these injurious agencies—e.g., privation, alcohol, and toxins—cause degeneracy in offspring there can of course be no natural selection, since under such conditions every variation must be unfavourable. Now all races, especially in the plant and lower animal worlds, are subject to deteriorating agencies. It follows if the doctrine of filial degeneracy held almost universally by medical men be true that the doctrine of natural selection universally held by biologists must be false. It is quite impossible that both can be true. The medical belief, therefore, raises issues which are vastly more important than appears at first sight. If the views held by alienists and others who have written so much concerning degeneracy are correct it follows that Darwin, Wallace, and Romanes were mistaken; the whole biological work of the last half century is wrong, and biological science is once more reduced to chaos. Let us, then, apply the test. The races of mankind had once a common origin, as is proved scientifically by the fact that they are able to interbreed. The fact that there are big races and small, black races and white, and so forth, proves that they have altered greatly in different directions from the primitive type. In no respect is this divergence greater or of more importance than in the proneness to intemperance or in the power of resisting disease, some races being vastly more prone to intemperance or less resistant to certain forms of disease than others. Now what direction has this divergence taken? Have races afflicted by alcohol and disease grown more and more degenerate or have they become more temperate and resistant? The answer is decisive. The simple fact is that every race without exception that has command of alcohol is temperate precisely in proportion to its past sufferings from the poison and every race afflicted by any lethal disease is resistant to that disease precisely in proportion to its past experience of it. The Jews and inhabitants of Southern Europe and Western Africa, who have longest had a plentiful supply of alcohol, are the most temperate peoples on earth; North Europeans, who have had a less plentiful supply, are less temperate; the inhabitants of the Western hemisphere, who have had little or no experience of alcohol, are the most intemperate of all; Africans are more resistant to malaria than Europeans; Europeans are more resistant to phthisis than natives of the Western hemisphere; Boers are more resistant to enteric fever and Hindoos to dysentery than Englishmen. Measles and whooping-cough are mild diseases to us; they depopulate the Pacific Islands. In no single instance can it be shown that any sort of degeneration has been caused in any race by alcohol, disease, or any sort of deteriorating agency. Such agencies cause evolution, not degeneration; were it otherwise the world would be uninhabitable.

The conclusion that medical men are mistaken in their doctrine of degeneracy, then, is irresistible. That doctrine is supported by nothing but statistics of the vaguest description which have been allowed to pass unquestioned only because they were in accord with an ancient and very natural myth. They are not half so voluminous and precise as those formerly published in support of the exploded doctrine of the transmission of acquirements and which all men found so convincing till the critical faculty had been awakened by doubt. In the case of alcohol the research committee of the Society for the Study and Cure of Inebriety, after investigations extending for nearly two years, quite failed to discover any evidence that parental intemperance affects offspring and, as you may remember, a prolonged discussion (April 6th to Sept. 21st, 1899) in the columns of THE LANCET gave no better results.

I am, Sirs, yours faithfully,

Southsea, June 27th, 1903. G. ARCHDALL REID.

GENERAL INFECTION BY A NEMATODE.

To the Editors of THE LANCET.

SIRS,—Since publishing my article "A Case of General Infection by a Nematode" in THE LANCET of May 23rd, p. 1435, I have examined the blood of a number of persons and I find the same nematode in a large proportion of cases; its presence is indicated by troublesome itching of the skin on the flexor aspects of the upper and lower extremities and the chest.

I believe that the infection is spread by means of the milk-supply, as I have found it therein on several occasions. I would emphasise the necessity of first boiling milk where used in large quantities for low diet.

It is my opinion that this parasite has been brought over from South Africa by our returning troops, the cycle being completed by means of the sewage farm, turnips and other roots, cows and their milk.

I am, Sirs, yours faithfully,

J. DENCER WHITTLES.

The University, Birmingham, June 25th, 1903.

MOTOR CYCLING.

To the Editors of THE LANCET.

SIRS,—The advantages of motor cycling as a means of locomotion for professional men are not sufficiently appreciated. During the last few months I have ridden hundreds of miles on a small Werner cycle both in town and country and it has occurred to me that my experiences might be of interest. I have been a cyclist for many years and I have from time to time employed the ordinary "push bicycle" in my work. During last March I decided to get a motor cycle, and after careful consideration and consultation with some motor-cycling friends I decided that a one and three-quarter horse-power Werner with a 22-inch frame was the most suitable for my work and I accordingly

procured one. I had no difficulty in familiarising myself with the working of this machine, for its construction is simplicity itself. Needless to say there have been some temporary troubles such as occur to all cyclists—such as soiling of the trembler, slipping of the belt, misfiring from excessive lubrication, fouling of the sparking plug, &c.—but I have had no serious mishap or breakage. At the end of March I was a fairly efficient rider and I was able to get about with comfort and ease. In the second week of April I was able to dispense with the services of one horse and in the first week of June with those of a second. I do not care for cycling in wet weather and I am therefore not able to dispense entirely with horseflesh. The cycling has given me a great deal of pleasure and I have been able to get over my work in a much shorter time. My health is also much better, as I am now compelled to take more exercise. These facts are sufficient to indicate that motor cycling may be not only pleasureable but also profitable to the medical practitioner. The one drawback to motor cycling is the vibration, but this I have reduced to a minimum in my Werner by not inflating tightly my front tyre and by employing a large motor saddle. The vibration in my new two horse-power 1903 Werner has been reduced very greatly. With experience in riding it is not necessary to put any great weight on the handle-bar. On an open stretch of road with no obstacles my machine will steer itself without my touching the handle-bar.

My advice to those about starting motor cycling is to get a low frame of 22 or 24 inches. With this, if in difficulties from any cause, the feet of an average man can be put on the ground at once. Great speed is not necessary; a strong, reliable machine, from one and three-quarter to two horse-power, weighing about 100 or 125 pounds, with good brakes, is all that is required. With this machine most hills—all in my neighbourhood—can be climbed with ease. It is well to carry a spare belt and to change belts when the machine gives warning of belt-slipping. It will be well to carry on long journeys some spare parts such as springs, &c. There are many other details which I might supply, but if any man with average mechanical dexterity will carefully study the construction and working of his cycle he will have no formidable difficulties to contend with.

I am, Sirs, yours faithfully,

Cardiff, June 27th, 1903. P. R. GRIFFITHS.

INCOME TAX ASSESSMENT AND THE MEDICAL PROFESSION.

To the Editors of THE LANCET.

SIRS,—Mr. Ritchie in his Budget speech admitted the injustice of the manner in which the income tax is at present assessed and levied and promised to give the matter his consideration with a view to reform, and has within the last few days appointed a select committee of which Sir Michael Hicks-Beach is chairman. It is the plain duty of the medical profession to lay before the committee such evidence as will bring about an amelioration of our treatment. The long and costly training, the arduous nature of the work by night as well as by day, the inevitable and heavy expenses, the few prizes, the many blanks, and the small average net incomes, the strictly personal and precarious character of the work which causes all earnings to cease during illness or incapacity, the short average duration of life which is less than that of other professions, such as the clerical and legal, and the alarming increase of insanity from the intolerable strain, form strong grounds for claiming more lenient treatment than is at present accorded to us.

I am, Sirs, yours faithfully,

Harley-street, W., June 24th, 1903. J. FLETCHER LITTLE.

THE ROYAL DENTAL HOSPITAL AND ITS ANÆSTHETISTS.

To the Editors of THE LANCET.

SIRS,—On June 16th the committee of management appointed six honorary anæsthetists and two paid "house anæsthetists." The six senior anæsthetists were appointed in order of their former seniority on the staff, Mr. Harvey Hilliard being reinstated to the original seniority that he had lost through having once resigned his appointment. By this arrangement I was made seventh on the list and was consequently not reappointed.

The precise advantage gained to the hospital by not reappointing to the staff all who applied for reinstatement at the instigation of the circular letter of the chairman is not obvious. The late dental superintendent, upon whose criticisms the recent effort to get rid of the staff was based, is, I am informed, appointed to one of the paid appointments. Under the existing arrangement the anæsthetic work at the hospital will be conducted one morning or one afternoon each day by a paid "house anæsthetist" and not by an honorary anæsthetist. During the six months that the committee of management have been considering the matter the work of the anæsthetic department of the hospital has been conducted by the former staff of anæsthetists with only one hitch, the hitch being that the salaried official did not turn up at the hospital during the absence of one of the staff, so that the administrations had to be conducted by a qualified medical man who was a dental student.

I am, Sirs, yours faithfully,

Old Burlington-street, W., June 27th, 1903. GEORGE FLUX.

THE GENERAL MEDICAL COUNCIL AND THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.

To the Editors of THE LANCET.

SIRS,—Under the above heading a letter appeared in THE LANCET of June 27th, p. 1839, from Mr. F. W. Collingwood, in which he writes, "no man will take a diploma when he has reasonable facilities for taking a degree, provided the respective standards nearly approximate." So far I am with him, but we part issue when he continues, "It is on these grounds that the Colleges should, I submit, be merged into the University of London."

Thanks to your courtesy this subject was pretty thoroughly gone into in your columns some six months ago, with a result which was more gratifying to those London graduates who took an interest in the matter than to the advocates of the scheme for associating the London University and Royal Colleges for examination purposes. I contended then, and I contend now, that the respective standards of the two sets of examinations do not "nearly approximate" and that therefore any suggestion that the two should be merged is unreasonable. It is in no dog-in-the-manger spirit that I oppose this scheme, but rather in that of the dog in the kennel who has only won there with some difficulty and who, not unnaturally, therefore, eyes with disfavour any attempt to force an entrance from the rear. Anyone who cares to know the *pros* and *cons* of this question can learn them by looking up the back numbers of THE LANCET.

I am, Sirs, yours faithfully,

Fulham, June 29th, 1903. C. FRANCIS STEELE.

THE MUTILATION OF PRESCRIPTIONS.

To the Editors of THE LANCET.

SIRS,—I am sending under separate cover a copy of the *Eastbourne Gazette* which contains the report of a case of importance under the Food and Drugs Acts. A prescription was written and taken by a sanitary inspector to various chemists and in one instance 78 per cent. of the principal drug—viz., mercuric chloride—was left out, although only one-sixteenth of a grain per dose had been prescribed by me. What I think is interesting to call attention to is the extraordinary defence of the defendant's solicitor—namely, that as it was the ordinary full dose as given by the British Pharmacopœia he thought it would be safer to give a smaller dose. Such an extraordinary proceeding deposed to by a chemist before the magistrates, involving the altering of a medical man's prescription to suit his fancy, is, I should say, unique.

I am, Sirs, yours faithfully,

W. G. WILLOUGHBY,
Eastbourne, July 1st, 1903. Medical Officer of Health.

*** We have read the report in question, which shows well how entirely the public and the medical man are at the mercy of the druggist. The circumstances in which a well-merited conviction was arrived at may be detailed later.—ED. L.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Sanitary Improvements at Mysore.—The Housing of the Poor in Bombay.—A Sanatorium for Tuberculosis for the Army.—Death of Dr. William Morrison.—Social Reforms.—A New Hospital for European Women and Children in Bombay.—The Plague Epidemic.—A Novel Scheme for Bombay.

THE Mysore State seems to be blessed with wise councillors. Several great engineering projects have been completed or are in progress and now a great sanitary scheme is planned for Mysore city. A large party of surveyors have just completed a survey of the city. It is recognised that ordinary sanitary measures are of no avail against the plague. The slums of the city are to be attacked first. Insanitary buildings will be demolished, the drainage will be remodelled on a scientific and modern basis, and new quarters on healthy sites will be provided for the displaced population. The whole scheme is estimated to cost over a quarter of a million sterling, a large part of which will be provided from the State funds.

The housing of the poor in Bombay city is the great problem which is being worked out by the Improvement Trust. Large numbers of the people have been dispossessed by various schemes and the first attempt at providing model artisans' dwellings was a commercial failure. In other respects the modern "chawls" at Agripadu were admirable. Since then cheaper accommodation has been aimed at and I now learn that arrangements have been made by which the necessary sanitary requirements will be secured and at the same time that even the moderate rents charged will pay for both the site and the building. This possibility of accommodation for the poor on a commercial basis has enabled provision to be made without delay for several thousand people and several plans are in hand to provide for more. The congestion of certain districts of the city is terrible and demolition on a large scale only made this worse. The trustees have now modified their scheme and have decided that construction shall precede demolition. New buildings will be put up as fast as possible and will be provided before demolition through the most densely populated areas is further proceeded with. It is anticipated that within two years a very large proportion of the population will be provided for.

A sanatorium for tuberculosis is to be established in the hills in the vicinity of the Kalka-Simla railway. It will be chiefly, if not entirely, for sick soldiers. A committee consisting of a Royal Engineer officer and two officers of the Royal Army Medical Corps are now engaged in selecting a site.

Dr. William Morrison, who has been for several years engaged in plague work in Bombay, fell over a banister at the Technical Institute on the morning of June 5th, and was killed. He was in the habit of sleeping on the verandah and it is supposed that in a drowsy state he mistook the direction and fell.

The social reforms which are proceeding apace amongst many of the natives of India have, many of them, a medical interest. An association has recently been formed at Allahabad the members of which pledge themselves to the education of women, not to allow their daughters to marry before the age of 12 years, to live a life of purity, and to encourage total abstinence. Other pledges are optional and indicate the great changes that are going on. They refer to the marrying of sons before they are able to support a family, to taking refreshments at a common table irrespectively of caste, and to refraining from ostracising those who have travelled in foreign parts or who have disregarded the prohibition of the re-marriage of women.

A new hospital for European women and children is to be built in Bombay in connexion with St. George's Hospital. The existing accommodation has been the subject of complaint for years. The building was originally used as barracks, then it was occupied as a hospital for men but was condemned and used for women. The new building will be a counterpart to the male wing and will contain 60 beds in addition to special wards. On the ground floor will be a large airy ward of ten beds for children, besides an operating theatre, several special wards, an obstetric ward, and a puerperal ward. The cost is estimated at five lakhs and the hospital will take two years to build.

The mortality from plague throughout India continues to decrease, though it is still double what it was at this time last year. Last week there were 8676 deaths, 7352 of which occurred in the Punjab, 504 in the Bombay Presidency, 221 in the United Provinces, 184 in Bombay city, 169 in Karachi city, 52 in Calcutta, 61 in Bengal, 33 in Mysore, 44 in Central India, and 79 in Kashmir. The threatened outbreak in Assam seems to have subsided, as only four deaths were reported.

The health officer of Bombay has submitted a novel and extensive scheme for grappling with the plague in that city. He considers that the only really valuable method at command is evacuation and that if 300,000 of the people from the infected quarters could be removed for a period of six months plague would be under control and soon disappear. At the same time cases of plague must be isolated, the vacated houses must be kept empty and thoroughly disinfected, and the most insanitary places must be demolished. To carry out this idea he advances the suggestion that Back Bay should be converted into a temporary floating town whither the people should migrate every fine season. The financial difficulties are insuperable, even if the scheme itself were practicable. Why, with 150 persons crowded on every acre it would require 2000 acres, to say nothing of the difficulties of constructing and providing for a floating town of such dimensions! The whole scheme is utopian.

June 12th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.

A Fine for Adulteration.

CASES of gross adulteration of food have not been of such frequent occurrence in our law courts recently as they were some years ago, but one which was dealt with at the Leigh police-court on June 22nd at the instance of the Lancashire county council shows that the evil, though perhaps scotched, is not killed. A Manchester firm of drysalters and wholesale grocers was charged with giving a false warranty with 14 pounds of white pepper to a grocer of Atherton. The chosen instrument of adulteration was ground olive stones which made up 10 per cent. of the white pepper. The defendants stated by their counsel that they got a warranty that the pepper was genuine from a firm of pepper grinders of Liverpool, from whom the pepper was bought. It is stated that the profit resulting from the adulteration with olive stones amounted to about £10 per ton. Counsel stated that on discovering that there was a suspicion of the pepper being adulterated the defendants sent round to their customers asking them to return the pepper and two tons were returned, the grinders, it appears, having promised to indemnify the defendants against any loss. The bench imposed a fine of £15 and five guineas special costs, thereby depriving the defendants, or rather their vendors, of the fraudulent profit on the two tons of pepper returned. Leave has been granted to appeal, and if advantage is taken of it we may yet hear how long the imposture has been going on and how the pepper grinders account for the remarkable accident which I presume it is admitted has occurred.

A Health Camp.

In connexion with the Manchester Physical Culture Society a small private camp has been established near Rostherne in Cheshire. It is intended that it shall be open each week-end during the present summer. If the weather continues favourable for outdoor living it will be gradually enlarged. It may be remembered that this society attracted some little attention a while ago by the zeal which some of its members showed for the cause of physical culture by going without their breakfast as the best preparation for a busy day and hard work, and also by their energy in trying to persuade others to do likewise. The scheme for summer camping is on the face of it more attractive than that of going without breakfast, though possibly some devotees of the latter cult may combine the two. The organisers of the scheme think that it may serve the purpose of an introduction to a healthy and inexpensive way of spending a holiday.

Manchester Royal Infirmary.

At a meeting of the board of the Manchester Royal Infirmary held recently a request on behalf of the Jewish

community for a Jewish ward in the new infirmary was withdrawn, the total number of Jewish patients in the infirmary last year not exceeding six. The board will, however, provide a "Kosher" kitchen on the Jewish community undertaking to defray the cost. In view of the continued prevalence of small-pox in the city it was decided, on the recommendation of Dr. J. Niven, to continue the restrictions with regard to the visiting of patients in the infirmary. Mr. John Thomson, the chairman, stated that the Manchester Corporation's Bill, which gives power to the corporation to acquire the site of the infirmary, was adopted and reported by the House of Lords' committee on Friday. It would go to the House of Commons this week and they hoped it might pass through the House in about a fortnight's time. There was no opposition to the Bill.

June 30th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Down Asylum.

THE annual report of Mr. M. J. Nolan, resident medical superintendent of Down District Asylum, shows that during the last year there was an increase in the number of inmates from 579 to 641. During the year 184 were admitted, 59 were discharged, and 63 died. Of the admissions the great majority (156) were first admissions. Of the new cases a history of hereditary predisposition was found in 64 per cent. A profit of £880 14*s.* 6*d.* has been derived from the management of the farm. The cost of maintenance of the asylum is £23 15*s.* 1*d.* per head, being £1 11*s.* per head less than in the previous year, and £1 3*s.* 7*d.* less than the average cost for all the Irish asylums. The Government inspector, Sir G. P. O'Farrell, M.D. T.C.D., in his memorandum of inspection, says that each succeeding visit satisfies him more completely of the excellent management of the resident medical superintendent and of the amount of time and thought which he devotes to the efficient and economic working of the institution.

Generous Offer by Lord Iveagh.

In response to the appeal issued by Trinity College, Dublin, for assistance to build laboratories and lecture rooms for physical science, electrical and mechanical engineering, botany, and zoology, Lord Iveagh has offered to provide the capital sum of £34,000 as soon as a sufficient amount has been collected and invested to produce the annual outlay contemplated by the College—£2730 per annum. The offer will hold good for three years from next May.

Ulster Medical Society.

The annual meeting of the Ulster Medical Society was held in the Medical Institute, Belfast, on June 26th, the President, Dr. John Campbell, being in the chair. The report of the council showed that since the society was reorganised 60 new members had been elected. During the year seven members resigned and four died, and after deducting these there are now on the roll of membership (Fellows and Members) 208. The income from all sources was for the year £449 10*s.* 9*d.* and after deducting the expenditure there was a balance of £178 2*s.* 7*d.* Several of the members have promised or subscribed a sum of £85 for the purpose of forming a lending library. The various reports (secretary's, treasurer's, and librarian's) having been passed the following office-bearers were elected for the session 1903-04:—President: Dr. John Campbell. Vice-Presidents: Dr. W. D. Donnan (Holywood) and Dr. A. G. Robb. Secretary: Dr. T. Houston. Treasurer: Dr. W. B. McQuitty. Librarian: Dr. R. R. Leathem. Pathological Secretary: Professor J. L. Smith. Council: Dr. J. S. Morrow, Dr. J. B. Moore, Professor J. W. Byers, Dr. J. Colville, Dr. W. M. Killen, and Dr. D. P. Gaussen (Dunmurry), with the addition of the trustees of the Medical Institute: Dr. J. Nelson, Dr. John Campbell, Professor J. A. Lindsay, Dr. A. Dempsey, Dr. J. McCaw, Dr. A. B. Mitchell, and Dr. C. E. Shaw.

Dr. E. C. Thompson, M.P., and the Omagh Guardians.

At the Omagh quarter sessions the action brought by Dr. Thompson, M.P., against the Omagh guardians to recover £12 12*s.* for acting as locum-tenent for Dr. H. B. Fleming, medical officer of the workhouse, for four days, was heard on June 21st. The facts brought out in evidence were that Dr. Fleming having broken a rib requested Dr. Thompson (who was attending him) to do his work at the workhouse. This he did, but on the fourth day the board of guardians sent him about his business and appointed another practitioner. The defence was that Dr. Fleming should (in accordance with a Local Government Board Order) have communicated with the master of the workhouse and could then employ a temporary substitute. The board had offered to pay Dr. Thompson £3 3*s.* for his work. Dr. Thompson in his evidence said that if the board had left him alone he would not have charged anything. It had put him out and put in a much younger member of the profession without any reason. He resented that and the result was that he had charged a fee not unreasonable in the circumstances. His Honour (Sir F. W. Brady, Bart., K.C.) thought that the guardians should have been delighted to have a medical man of the eminence of Dr. Thompson in charge of the patients and surely he should be paid a reasonable sum for his services. It was not to be wondered at that Dr. Thompson should feel slighted when he had been dismissed and someone else employed. This was not a very courteous act on the part of the guardians. He held that Dr. Thompson was engaged to do the duty by being asked by Dr. Fleming until the next meeting of the board and his opinion was that the guardians would have been well advised had they settled the case with Dr. Thompson. He gave a decree for £6 6*s.* and costs. Dr. Thompson deserves the thanks of the Poor-law medical officers for having so pluckily championed their cause and he is to be sincerely congratulated on the issue of his action against the Omagh guardians. The guardians at their meeting on June 27th decided to appeal.

The late Professor Cuming, M.D.

A three-quarter length portrait in oils of the late Professor Cuming, M.D. (painted by Mr. H. Douglas) has been presented by two of his patients, Mr. and Mrs. T. R. Walkington of Belfast, in memory of a long and deeply valued friendship, and is to be placed in the Cuming ward of the new Royal Victoria Hospital.

Death of Mr. Marshall Weir, M.R.C.S. Eng., J.P.

I regret to announce the death of Mr. Marshall Weir, in his seventy-fourth year, at Knock, Belfast. The deceased, who was educated at Queen's College, Belfast, became M.R.C.S. Eng. in 1855 and for many years practised successfully at Dromore, co. Down, where he was factory surgeon and medical attendant of the constabulary. Some time ago he retired and lived quietly near Belfast.

Queen's College, Cork.

At the close of the winter session the following exhibitions were awarded:—In practical medicine, Mr. Daniel F. Hegarty; in practical surgery, Mr. John P. Lynch, Mr. Michael Cagney, and Mr. John E. Hart; and in practical midwifery, Mr. Michael Cagney and Mr. John P. Lynch.

Cork Medical and Surgical Society.

At a specially convened meeting of the Cork Medical and Surgical Society held on June 25th, Dr. N. J. Hobart being in the chair, it was decided to present an address to His Majesty the King on the occasion of his visit to Cork. Suggestions were made as to the form the address should take and a committee was appointed to draft it. It is conceded on all hands that His Majesty will be most cordially welcomed when he visits the southern capital, as it is generally believed that he takes a warm personal interest in the material prosperity of Ireland.

The Munster Branch of the British Medical Association.

On June 27th a meeting of the Munster branch of the British Medical Association was held in Cork to elect a member of the branch as representative to attend the meeting of delegates at Swansea. Professor H. Corby was elected and the members present were unanimously of opinion that he should strenuously urge on the Association the importance of aiding the existing movement for improving the positions of Irish Poor-law medical officers.

An Enlightened Appointment.

At the meeting of the Roman Catholic bishops at Maynooth College recently Mr. Antony Roche, M.R.C.P., L.R.C.S. Irel., was appointed lecturer to the college in public health. Having regard to the intimate relations existing between the Irish poorer classes and the priest all medical men, whatever their creed, will approve of an innovation whereby the priest gains some insight into scientific hygiene.

June 30th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Action of Chloride of Sodium upon the Œdema of Bright's Disease.

AT the meeting of the Hospitals Medical Society held on June 12th M. Widal and M. Lemierre communicated a paper in which they stated that they had been able to produce œdema at will in two patients suffering from parenchymatous nephritis by the addition to their ordinary diet, which was carefully estimated, of 10 grammes per diem of common salt, if the dose was continued for some days. The two patients had suffered from nephritis for some months and it had appeared as a sequela of an infectious fever. Chloride of sodium will not produce œdema in every case of nephritis, for in the cases of four patients suffering from interstitial nephritis its administration produced no effect. Only in patients suffering from parenchymatous nephritis and in whom œdema had already appeared did the chloride of sodium provoke a recurrence of œdema. In a patient who had suffered from parenchymatous nephritis for seven years chloride of sodium administered for eight days only produced a recurrence of œdema which had been noted some days previously. M. Widal and M. Lemierre suggest as a reason for this that the patient was in a state of "chloridation" at the moment when they began the test of adding chloride of sodium to his diet. Before the test began the patient was passing in his urine a much larger quantity of chlorides than he absorbed in his milk diet. During the period of the test he passed in his urine a quantity of chloride of sodium nearly equal to that absorbed. In two other patients, however, the extra quantity of chloride of sodium was retained partially or altogether. It is therefore only when the organism is in a state of "chloridation" that an additional quantity of chloride of sodium will provoke œdema. The salt retained in the tissues causes a flow of fluid into them and so produces œdema. At the meeting of the same society held on June 26th M. Widal and M. Javal continued the discussion of the subject. In a patient who had suffered from parenchymatous nephritis they studied the chloride exchange every day for a period of 72 days. Nine times during this period they varied the amounts of salt in the food so that five times they brought about the excretion of chlorides and four times their retention. During the course of the experiments the patient's weight oscillated between 56 and 66 kilogrammes. When under the influence of "chloridation" the patient's ascending weight curve touched 62 kilogrammes œdema appeared. On the contrary, when under the influence of "dechloridation" the descending weight curve touched 61 kilogrammes the œdema disappeared. The limit of hydration without œdema therefore appeared in the organism of this patient to be reached when he arrived at a weight of six kilogrammes above his minimum weight. Although in this patient the elimination of chloride of sodium was defective the elimination of methylene blue seemed to remain almost normal. His albuminuria curve varied, as a rule, directly as the hydration and the "chloridation" of his tissues. M. Widal and M. Javal said that it was impossible to overlook the importance of the action of chlorides upon certain forms of nephritis. In the patient under consideration when a solid diet was taken œdema appeared and the albuminuria curve rose. A few days, however, on a purely milk diet made the œdema disappear and diminished the albumin. A daily dose of ten grammes of chloride of sodium given with the milk brought back the œdema and increased the albuminuria, but when the patient was placed upon a diet composed of 400 grammes of raw red meat, 500 grammes of bread or 1000 grammes of potatoes, and no chloride of sodium the œdema disappeared and the albuminuria diminished. M. Widal and M. Javal concluded by saying that the good effects of milk, which have been known empirically for a long time, are probably due entirely to its relative poverty in chlorides. The composition of the food does not matter so much as its relative richness in salt. Therefore solid foods of various kinds, either taken alone or in combination with milk, is, if no chloride of sodium is added to the diet, by no means a bad adjuvant in the treatment of certain conditions of nephritis.

Concerning the Medical Crisis.

A judgment recently delivered by the Tribunal of the Seine has been made the text for a number of articles in the French newspapers upon the medical profession and the numerous mortifications to which its members are exposed. A medical man was taken in the act of stealing goods from a shop to the value of 60 francs. When asked why he had acted so he replied that he was starving and this was true. The authorities were anxious to place him under police supervision but this could not be done as he had no domicile and he was therefore condemned in default (i.e., because he did not answer the summons) to six months' imprisonment. Some of his friends came to his aid and found a post for him in a small town, but as he had been sentenced he had first of all to be rehabilitated. His sentence has not been remitted but he is allowed an indefinite postponement of its execution (*application de la loi de sursis*). The case of this unhappy man is likely to be followed by other and similar ones if the medical profession continues to be so overcrowded as is now the case. Few persons are aware how very many medical men there are, especially in Paris. Official statistics published under the authority of the Assistance Publique and the Hygiene Department of the Ministry of the Interior show that in 1901 the number of medical practitioners increased from 14,376 to 17,108. In 1876 there were in France 2·90 medical men for every 10,000 inhabitants, while in 1901 the number was 4·08. In the department of the Seine alone there were in 1876 1606 medical men, while in 1901 there were 3281. Of 17,108 medical practitioners, 9221 practise in the country districts, serving a population of 27,595,528, while there are 7887 medical men for the 11,366,417 town dwellers. In Paris alone there are 2892 medical men for a population of 2,714,068, or 10·65 for every 10,000 inhabitants. Even in towns of from 10,000 to 20,000 inhabitants the proportion of medical men is 4·89 per 10,000. In country districts the proportion is about 3 per 10,000. These figures will show young men who are hesitating as to what profession to adopt that the medical profession does not hold out any very great chances.

June 30th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Mosquitoes and Dengue Fever.

YET another disease is said to be transmitted from man to man by means of the troublesome mosquito. Dr. Graham whilst studying an epidemic of dengue at Beyrouth which began there in 1901 noticed that all the houses in the infected parts of the town, though free from anopheles, contained large numbers of culex fatigans and stegomyia fasciata. He therefore decided to try to prove by experiment whether one or both of these species was responsible for spreading the disease. Eventually he found that when one patient only in a house was ill and every mosquito in that house was carefully killed by daily massacres the other people, even if living in the same room with the patient and in the same bed, did not contract dengue. Moreover, in the dengue houses, where precautions of killing all the mosquitoes were only partially carried out, the disease spread to other inmates as if no attempt had been made. Four people who voluntarily submitted to inoculation experiments were chosen from villages near Beyrouth which dengue has never visited and were made to sleep for two or three consecutive nights under mosquito nets into which were introduced mosquitoes from the nets of dengue patients. The first contracted dengue on the fifth day, the second on the sixth day, the third on the fifth day, while the fourth did not show any signs of fever. It was then discovered that this fourth individual had already had dengue in 1889 and though the mosquito experiment was again tried on him he remained immune. A further experiment was then made by taking mosquitoes from dengue patients to a village 3000 feet high, where there were no mosquitoes and no dengue. One of the villagers contracted dengue after being shut up with the mosquitoes for four nights, while a second took the disease after five nights. Both cases followed the ordinary course of dengue, the imported mosquitoes were destroyed, and no other cases occurred in the village. These experiments tend to settle the doubtful period of incubation of this fever, which would seem to be about five days, and it would be interesting now to know if observers in other countries can corroborate these

results. Dr. Graham claims also to have discovered the microbe of dengue both in the red corpuscles of man's blood and in the stomach of the mosquito. He says it resembles the æstivo-autumnal hæmatozoon of malaria and also the microbe of Texas fever.

Discovery of Beri-beri in Egypt.

Captain J. H. Rivers, R.A.M.C., has found two cases of this disease which was previously unknown in the country. The patients now in the Egyptian Military Hospital at Abbassieh are two recruits from two neighbouring villages in Gharbieh province. Both were admitted to hospital for diarrhœa, probably connected with slight pellagra, from which they both suffered. Though the diarrhœa was speedily cured they were found to be suffering from emaciation without any cause, diminution of sensation on circumscribed spots on the legs and feet, pain in the calves of the legs on pressure, absent knee-jerks, and all the signs of peripheral neuritis without anything to account for it. They had also great palpitation, increased on movement or on standing, and when able to be erect they balanced themselves with a stick in a characteristic position. They have thus shown all the ordinary symptoms of beri-beri except œdema of the legs. It will be important now to see if additional cases can be found from Gharbieh where a sharp look-out is being kept.

The Army of Occupation.

For the 20 years which have elapsed since England occupied Egypt the quarters provided for British married soldiers have been a disgrace, consisting only of old Egyptian barrack rooms divided by partitions which freely admitted light, sound, and smell. Major-General Sir R. Talbot determined with habitual energy to try to remove this blot and has been very successful in his attempts. At Abbassieh there are now new first-rate married quarters for 56 families, the cost of which has amounted only to £21,000. Each family has a spacious balcony on two sides and there is an ample provision of sleeping accommodation depending upon the size of the family, besides one living-room and a small kitchen. Baths with hot and cold water laid on, filtered water by the Berkefeld system, a play-ground for children, laundries, and two schoolrooms are also provided, while for the general use of this portion of the local garrison a water tower has been re-erected, supplying the necessary pressure to the neighbouring barracks, a very up-to-date dairy has been opened, and the soda water factory has been greatly improved. In the barracks hot water has been laid on, so that any man can have a hot bath when desired. To make the cantonment more complete small houses are now being built at Government expense for the commandant, the riding-master, and the quarter-master. Attached to the Kasr-el-Nil barracks, with lovely views of scenery up and down the Nile, quarters for 48 families belonging to the infantry battalion and various departments are now being built at a cost of £25,000. Each quarter consists of a living room and kitchen, with one or more bedrooms, besides large airy stone balconies on two sides of equal area to the rooms. These balconies are flanked by wide Roman arches supported by single capitals and present almost the only instance of architecture of which the English in Egypt can be proud. The new building looks very well from the river and is close to the extremely ugly new museum. These married quarters are provided with schoolrooms, laundries, earth-closets, and 12 fixed baths. In Alexandria also the quarters for married soldiers have lately been made excellent and though £15,000 have been spent upon construction it has practically cost nothing to the British Government, because this sum was raised by selling a piece of land in the middle of the town. At the citadel nothing has yet been done to improve the married quarters, because the authorities at home have not yet decided whether to rebuild the hospital and barracks on the existing insanitary site or boldly to transport them to the pure air and virgin soil of the desert. Before General Talbot's time nothing was done for the evening recreation of the troops and the men often contracted typhoid fever and other diseases by frequenting dens in the town. Now two excellent soldiers' clubs have sprung up managed by themselves, in one of which alcoholic drinks are allowed, and this innovation has worked with such uniform success that the system will certainly be tried in other garrisons. Boiled or filtered water has been supplied in all barracks and the typhoid fever rate has in consequence sensibly declined.

Expedition to Abyssinia.

Mr. Dupuis's journey to walk round Lake Tana and to follow the Atbara river from its source to the Nile was recently a great success, and partly this success was due to the fact that the expedition was accompanied by Mr. A. J. Hayes who was able to talk Arabic and converted some of the hostile Abyssinians into friends by treating them for their diseases. He maintains that the Abyssinians are even dirtier than the Egyptians and the diseases of which he saw most were scabies, syphilis, and leprosy. At one place, whilst crossing a desert track, the party was attacked by a swarm of bees perishing from thirst which fastened on every moist portion of the explorers' skins, clustering especially about their arm-pits and stinging them considerably in the process. In fact, these bees seem to have done them more harm than the lions and other wild animals which they met. The party kept very free from fever, though this was not at all the case with Sir W. Garstin's expedition from Mombassah to Uganda and thence down the Nile. The irrigation engineers are now busy studying the fascinating problem as to where future reservoirs are to be constructed on the Nile waters, but it is to be hoped that Abyssinian territory will be avoided for obvious political reasons. Nature seems to have indicated that the White Nile should supply Egypt with water, while the Sudan must be dependent on the Blue Nile and the Atbara.

Cairo, June 20th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Principles of Medical Ethics.

THE subject of medical ethics has been the source of more disturbance in the profession of the United States than any other cause or perhaps all other causes combined. These principles were established by the fathers of the present generation of physicians and were embodied in a code which was adopted by the American Medical Association at its organisation in 1846. The "Code" was designed to maintain a high grade of professional character among the members of the association at the period when the fascinations of homœopathy were leading many astray. One of the most stringent features of the "Code" was that which held that it was derogatory to the dignity of the profession to have any fellowship with a person whose practice was based on an exclusive dogma. This article of the "Code" not only forbade any physician adopting such methods of practice from entering the association but also prevented members from consulting with homœopathists. For a long period this article was popular with the regular practitioners, but in time the homœopathists acquired wealthy families and consultations with them were lucrative. Lured by this bait there occasionally occurred remarkable lapses from the ranks of the regular practitioners, but the seceders were immediately expelled from all societies and placed under the ban of the profession. At length the methods of the homœopathists began to be modified, the exclusive dogma was disregarded, the whole range of remedies was adopted, and the old system of homœopathy became little more than a name. Then began the agitation of the question of a change of the "Code" which would allow consultations of the regular with the irregular practitioners and every effort has been made for many years on the part of a few discontented persons to secure the rescinding of the article of the "Code" forbidding consultations with homœopathists by members of the American Medical Association. At the late meeting of the association a committee, appointed a year ago to revise the "Code," reported a new "Code" under the title "Principles of Medical Ethics." The committee explains the change of title as based on the idea that the American Medical Association occupies some such relation to the constituent State associations as the Government through its constitution holds to the several States. Following out this idea the committee formulated general principles of conduct and left to the several State associations the duty of preparing each its own "Code." This ingenious method of mitigating the rigorous restrictions of the old "Code" was adopted unanimously and a most disagreeable source of contention has been for ever removed from the profession. It is very doubtful, however, if professional character will be elevated by this compromise with homœopathy and kindred heresies.

Results of Medical Inspection of Schools.

New York now has a system of public school medical inspection which is productive of the most beneficial results

and seems to be worthy of imitation. Originally the Board of Health appointed physicians to visit each school in the morning and to examine such scholars as were referred to them by the teachers, thus making the teachers the sole judges as to "suspects." Another defect in this scheme was the exclusion of all "suspects" from the schools without treatment unless the children were taken to a dispensary, which only occasionally happened. The result was the more or less permanent exclusion of large numbers from the schools, as appears from the following figures: from Sept. 12th to Dec. 31st last the number of children excluded in the borough of Manhattan alone was 12,647 for contagious eye diseases, 8994 for pediculosis, and 8661 for contagious skin diseases. With a view to overcome the evil of exclusion and to render the method of detection more perfect the physician is required to examine the schools assigned to him daily and the class-rooms weekly and to give personal attention to all suffering from sore-throats and diseases of the eye and the skin. The result of this closer inspection was that in certain parts of the city when the schools opened a third of the scholars were sent away. To prevent these children from long exclusion a corps of trained nurses was appointed who are required to visit each school every morning, prepared to treat all cases whose presence will not be dangerous if immediately treated, and who must visit the homes of those excluded in order to direct the treatment by the mothers or to see that they are placed under proper medical care. In January the nurses cared for 13,193 cases and visited 540 homes. The result of the new system has been eminently satisfactory, for not only has the spread of contagious diseases by means of school children been brought under the control of the health officials, but the children suffering from these diseases are detained from school for the shortest possible period.

The Tuberculin Test as a Proof of the Infectiveness of the Milk of Cows.

Dr. Mohler, chief pathologist of the Bureau of Animal Industry, United States Department of Agriculture, has recently made some important investigations as to the value of the tuberculin test in a herd of cows many of which had died from rabies. The milk of 16·07 per cent. of 56 cows was found to be pathogenic to guinea-pigs when they were fed on it. Of the experimental animals inoculated intra-abdominally in the first series at least one guinea-pig died from tuberculosis in each six different instances, showing that the milk of 10·9 per cent. of 55 reacting cows in this experiment proved fatal. In the second series the milk from seven individual cows out of 45 examined, or 15·5 per cent., was demonstrated to possess virulent tubercle bacilli. Combining these results it appears that 11 out of 55 cows, or 20 per cent., secreted milk which transmitted tuberculosis to one or more experimental animals when injected into the peritoneal cavity. Some of the more important conclusions of Dr. Mohler are: cows secreting virulent milk may be affected with tuberculosis to a degree that can be detected only by the tuberculin test; the physical examination or general appearance of the animal cannot foretell the infectiveness of the milk; and tuberculous cows should not be used for general dairy purposes.

A Uniform System of Birth and Death Registration.

There is a pressing want of a uniform system of registration of births and deaths in this country and many efforts have been made to remedy the evil. The difficulty attending uniformity lies in the fact that there is no general law regulating the collection of vital statistics by the census bureau of the general Government. At the recent meeting of the American Medical Association a permanent committee on vital statistics was appointed to coöperate with the corresponding committees of the American Public Health Association, the Conference of State and Provincial Boards of Health of North America, and with other committees organised for this purpose in the work of promoting the adoption of suitable registration laws and the extension of the registration area, the proper compilation and presentation of vital statistics by states and cities in weekly and monthly bulletins and annual reports, the use of a standard certificate of death, and also in further work relating to the extension, improvement, and practical use of the international classification of causes of death, the disposition of jointly returned causes, and preliminary work relating to the next decennial revision. It is believed that the combined efforts of the committees representing the great medical and public health organisations will secure for this country a very perfect law from the next congress governing the registration and collection of vital statistics.

The Bacterial Impurities of Vaccine Virus.

The Director of the Hygienic Laboratory of the Public Health and Marine Hospital Service of the United States has recently made a series of investigations to determine the bacteriological impurities of the vaccine virus put on the market in this country. In the course of a year the vaccines of ten different manufacturers were examined with the following results: of 190 dry points an average of 4354 bacteria per point were found; of 244 tubes of glycerinated virus examined an average of 1742 bacteria per tube were found; a number of these capillary tubes contained over 10,000 bacteria and one as many as 30,000. The pus cocci and other bacteria pathogenic for laboratory animals were found in both the dry points and the glycerinated virus. Some of the glycerinated virus contained an excessive number of bacteria which decreased notably after a few weeks, indicating the sale of "green" or unripe product and showing that it was not glycerinated a sufficient length of time before it was sold. The conclusions reached are that too much confidence is placed by the producers in the germicidal powers of glycerine and that excessive precautions must yet be taken so to free vaccine virus from bacteriological impurities that it will be harmless.

June 18th.

Obituary.

WILLIAM CADGE, F.R.C.S. ENG.

IT is with great regret that we have to announce the death, at the age of 81 years, of Mr. William Cadge. He had been for some time in a precarious state of health and passed away on June 25th. "Cadge of Norwich," as the deceased surgeon was familiarly called by the whole medical world, received his medical education first at the Norfolk and Norwich Hospital and afterwards at University College, London, where he eventually became house surgeon to Robert Liston. He passed the Membership examination of the Royal College of Surgeons of England in 1845 and becoming Liston's assistant worked with him until his death in 1847. When that great loss to British surgery took place Mr. Cadge, who had been in attendance upon his master, conducted the post-mortem examination and contributed to THE LANCET of Dec. 11th, 1847, an interesting account of the conditions found thereat. Mr. Cadge next held the post of demonstrator of anatomy in University College and contributed the article, "The Surgical Anatomy of the Head and Neck and Upper Limbs" to "Morton's Surgical Anatomy." In 1848 Mr. Cadge became by examination a Fellow of the Royal College of Surgeons of England and in 1850 he was appointed assistant surgeon to University College Hospital. Two years later, however, he gave up this post and returning to Norwich was appointed assistant surgeon to the Norfolk and Norwich Hospital, becoming in due course surgeon and finally consulting surgeon, a post which he held at the time of his death. His action in throwing up the coveted position of surgeon to University College Hospital, where his colleagues included Parkes, Jenner, Walshe, Erichsen, Richard Quain (the surgeon), John Marshall, and Sir Alfred Garrod, came as a great surprise to every one, but Cadge was justified by results, for he obtained by return to his native capital an individual position in surgery that would have been hard to come by in the metropolis.

On returning to Norwich he was at first in partnership with an old practitioner named Mills. On Mr. Mills leaving Norwich Mr. Cadge entered into partnership with the late Mr. Donald Dalrymple and on the latter's death he became partner with Dr. Michael Beverley, a colleague on the consulting staff of the Norfolk and Norwich Hospital. Mr. Cadge was an admirable all-round surgeon, but, as becomes a Norfolk man, his chief reputation was gained in the treatment of stone and he was one of the earliest provincial surgeons to practise Listerism. In 1874, when the British Medical Association met at Norwich, Mr. Cadge gave the address in surgery, taking for his subject Urinary Calculus. The manner and matter of the address may be gauged from

the following passage which appeared in THE LANCET of August 22nd, 1874, p. 279 :—

Mr. Cadge's address had reference to one definite disease of the most concrete character—that of stone—and its wonderful prevalence in Norfolk. It was altogether admirable. In one respect, indeed, it was deficient and disappointing. Mr. Cadge told us nothing about his mode of operating. Like other operators of the largest experience he has the least to say. It transpired incidentally that he had performed nearly 200 operations for stone. But with that strange modesty which comes of large experience and great expertness we hear nothing of his method. An operator who could count his cases on his fingers would have told us exactly where and how and how much to cut. But Mr. Cadge repressed all this wisdom and showed that he was more bent on elucidating the origin of stone than displaying his own skill. Like a good physician, he was concerned with the diathesis as well as with the disease. He showed how many things have to be considered in forming theories of lithiasis and stone. He raised the dietary of the Norfolk peasantry into a question of the highest scientific interest. He invested milk with a new importance—as an antilithic food—and attributed the striking absence of stone in the children of the well-to-do-classes to the fact that they drank milk. On the contrary, he attributed much blame to the strong, sweet, new beer of which the Norfolk peasant drinks too liberally. He is disposed to believe in the power of the hard water of Norfolk to produce stone. Finally, he thinks there is as much inherent probability in favour of the hereditary transmission of stone as of gout, cancer, or scrofula. Let us hope for a statesmanship that will make milk cheaper and water—not so hard as Norfolk water—the plentiful possession of every poor man.

To estimate Mr. Cadge's services to surgery we must consider his work on stone. Connected as he was with the only large hospital in that district of the British Isles where stone is most frequently met with his attention was necessarily drawn closely to the study of its treatment and he lived to see a complete revolution in the methods. He operated on his first two cases of stone in 1850 ; in one case he removed the stone by the lateral operation and in the other by lithotrity in six sittings, and when in 1886 he delivered his Hunterian lectures at the Royal College of Surgeons of England on stone he was employing the suprapubic method and lithotrity at a single sitting, in addition to the lateral operation.

He had great success with lateral lithotomy and naturally he valued the operation highly and liked to retain it for certain cases. In the lectures already referred to he stated that he had performed lithotomy in 169 cases and of these 29 had died ; but the success of these results can be more accurately estimated when we learn that the average age of the 29 fatal cases was 60 years and the average weight of the stone removed was two ounces. In his method of performing the lateral operation he followed in the main the teaching of those excellent Norwich lithotomists, Philip M. Martineau and J. G. Crosse. For a time he tried the median operation, but ultimately returned to the lateral. Mr. Cadge was always ready to adopt new methods and he was an experienced and successful exponent of lithotripsy, but he would not admit the claim made by many lithotritists at the present day that all forms of lithotomy must be abandoned. He maintained that for large stones the suprapubic method was decidedly the better, especially for the hard pure uric acid stones of East Anglia.

In 1880 Mr. Cadge was elected a member of the Council of the Royal College of Surgeons of England, holding this post for 16 years, and in 1886 he was elected Hunterian professor of surgery, the subject of his Hunterian lectures being Lithotomy and Lithotrity. In these lectures he gave the medical profession the advantage of his vast experience as an operator.

Apart from his more purely professional duties Mr. Cadge was a justice of the peace and served the office of High Sheriff with much success. He will go down to posterity, not only as an able surgeon, one who was when in his prime among the greatest authorities in England on urinary calculi, but also as the giver of two magnificent donations to the hospital with which he was for so many years connected. These two donations were respectively of £10,000, the first being given in 1889 and the second in 1899. The announcement of the first was somewhat dramatic. It was made at the annual meeting of the governors of the Norfolk and Norwich Hospital which was held on April 13th, 1889. It appeared that about eight years previously Mr. Cadge had said that he was empowered to state that an anonymous governor had promised a sum of £10,000 to revert to the hospital after the death of himself and his wife, on condition that a sum of money should be subscribed by the public and that the new building should go on to its completion. At the meeting it transpired that Mr. Cadge himself was the donor referred to and that it was his intention at once to place the £10,000 in the hands of the hospital authorities. The result of the original offer was that the public subscribed £5000 and Lord Leicester £2000, so that the hospital was practically indebted to Mr. Cadge for £17,000.

Mr. Cadge's second princely donation was announced at a meeting of the hospital governors which was held on Jan. 14th, 1899. He remarked upon this occasion that "lump sum donations" did not go very far in increasing the annual income of a hospital and that therefore there was just as much need for annual subscriptions as before. Mr. Cadge's estimate of himself and his actions was always modest, but everyone must admit that a permanent income of between £600 and £800 per annum is no mean addition to the funds of a hospital.

Mr. Cadge married a sister of the late Sir Richard Quain but she predeceased her husband by many years and left no children. So passes away a notable figure in British surgery, but his example and precept will continue to inspire those who take up his work and it is with confidence that we say "Uno avulso, non deficit alter."

JOHN WOODMAN, M.D. ST. AND., F.R.C.S. ENG., L.S.A.,
MEDICAL OFFICER OF HEALTH OF THE CITY OF EXETER.

Dr. John Woodman died at his residence Chichester-place, Southernhay, Exeter, on June 28th, in his sixty-seventh year. The deceased, who was the son of a medical practitioner of Exeter, was born in that city and at the early age of 15 years went to Australia to assist a relative who had a cattle ranch. He returned to England at the time of the Crimean war and served with the Turkish contingent during that campaign. At the close of the war he entered as a medical student at Guy's Hospital and obtained the M.R.C.S. and L.S.A. qualifications in 1860. Ten years later he was admitted F.R.C.S. Eng. and in 1882 graduated M.D. at the University of St. Andrews. On obtaining his qualifications Dr. Woodman commenced practice in Exeter and soon obtained several public appointments. He was on the honorary staff of the Exeter Dispensary as well as being medical officer of health of the city, an appointment which he held until his death. He was for 38 years medical officer to the Exeter Diocesan Training College and for several years was medical officer to the workhouse, having only quite recently resigned the post. He was also a past president of the local branch of the British Medical Association. Dr. Woodman took a great interest in Church matters and for several years was churchwarden of St. Sidwell's Church. Dr. Woodman will be greatly missed in Exeter where he leaves behind him a record of excellent work uniformly well done. He leaves a widow for whom much sympathy is felt.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF MEMBERS OF COUNCIL.

THE fifteenth election of Fellows to fill the vacancies in the Council of the College under the new regulations was held at the College, Lincoln's Inn Fields, on Thursday, July 2nd, between 1.30 and 4.30 P.M.

The result of the voting was as follows :—

	Votes.	Plumpers.
MR. H. T. BUTLIN	424	16
MR. G. H. MAKINS	407	42
MR. C. T. DENT	352	60
MR. F. S. EVE	335	62

Mr. Butlin is, therefore, re-elected. Mr. Makins and Mr. Dent are elected members of the Council.

655 Fellows voted by post, 10 personally, and 3 proxies arrived too late.

COCOA OR GRUEL.—At the meeting of the Chard board of guardians on June 23rd a letter was read from the Local Government Board inspector stating that he knew of no rule which permitted the giving of cocoa to casuals as was done in the Chard union ; they ought rather to be given gruel or broth. Several of the guardians expressed the opinion that gruel was better than cocoa, but the chairman remarked that the auditor had raised no objection to the cocoa and the matter was thereupon allowed to drop.

Medical News.

UNIVERSITY OF CAMBRIDGE.—The following medical and surgical degrees were conferred at the closing congregations of the academical year:—

Doctor of Medicine.—W. R. Pollock, Trinity.
Bachelor of Medicine and Bachelor of Surgery.—J. D. H. Freshwater and H. L. P. Hulbert, Trinity; F. B. Manser, St. Peter's; and L. E. H. R. Barker, Caius.
Bachelor of Medicine.—W. T. Scott, Clare; and W. F. Buckle, Caius.
Bachelor of Surgery.—F. Whitaker, Trinity; G. T. Birks, King's; P. K. Muspratt, Christ's; and H. C. S. Woodward, Downing.

ROYAL COLLEGE OF SURGEONS IN IRELAND: BARKER ANATOMICAL PRIZE FOR 1904.—A prize of £21 is offered by the Royal College of Surgeons in Ireland for competition by any medical student whose name is on the anatomical class list of any school in the United Kingdom. The preparations entered must be placed in charge of Mr. Arthur H. White, the curator of the museums of the College, before March 31st, 1904. The prize is offered for a dissection from behind of the pneumogastric nerves in the thorax. Conditions under which the competition is to be carried out can be obtained from the curator of the museums.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—Mr. Edward Turner Thompson, L.R.C.P., L.R.C.S. Irel., who has recently given up practice at Wellow, near Bath, has been presented with an oak writing cabinet and an illuminated framed address from 300 subscribers as a practical expression of the respect felt for Mr. Thompson by his former patients. Mrs. Thompson was the recipient of a standard lamp.—At the distribution of medals and certificates to the successful candidates of the Bugle branch of the St. John Ambulance Association, which took place on June 20th, the members presented Mr. Archibald Shaw, M.D., C.M. Glasg., of St. Austell (Cornwall) with a gold pen and pencil case as a mark of appreciation for his services as honorary lecturer.

DURHAM UNIVERSITY MEDICAL GRADUATES' ASSOCIATION.—The annual meeting of this association took place at the Café Royal, Regent-street, London, W., on June 25th. Dr. W. D. Arnison of Newcastle-on-Tyne presided and there was a goodly muster of members. The chief point of interest in the proceedings was the proposal to take active and energetic steps to endeavour to procure Parliamentary representation for the University of Durham similar to that which is enjoyed by other universities of equal rank and that a copy of this resolution should be forwarded to the senate. This was proposed by Dr. F. S. Palmer, seconded by Dr. T. Outterson Wood, cordially supported by Sir George Hare Philipson, Dr. Diver, and Dr. Arnison, and carried unanimously. The following were balloted upon and duly elected as officers of the association for the ensuing year. President: Dr. Frederick Spicer. Vice-Presidents: Dr. J. W. Hembrough and Dr. H. T. Herring. Honorary secretaries: Mr. H. B. Angus and Dr. Outterson Wood. Honorary treasurer: Dr. S. W. Plummer. In the evening the members and guests numbering 95 dined together at the Café Royal, Dr. Spicer, the newly elected President, being in the chair. Among those who supported the President were Sir Henry G. Howse (President of the Royal College of Surgeons of England), Sir William Taylor, K.C.B. (Director-General of the Army Medical Service), Dr. R. Farquharson, M.P., Sir Hugh R. Beevor, Bart., Sir Lennox Napier, Bart., Dr. W. Ewart, Dr. J. Dundas Grant, Professor R. Howden of Newcastle, Professor A. Robinson, Dr. W. H. Allchin, Dr. J. Mitchell Bruce, Mr. T. Wakley, jun., Dr. Harrington Sainsbury, Dr. Ernest W. White, Dr. G. Danford Thomas, and others. The loyal and patriotic toasts having been given by the President, Mr. T. Horrocks Openshaw, C.M.G., proposed "The Navy, the Army, and Reserve Forces" and Sir William Taylor replied. Professor Robinson proposed "The University of Durham" and Sir George Philipson replied. Sir Hugh Beevor proposed "The University of Durham Medical Graduates' Association" and Mr. Angus, the secretary for the north, replied. Dr. Palmer proposed "The Visitors" and Sir Henry Howse replied. Dr. Outterson Wood, the secretary for the south, proposed "The Health of the President," who in a spirited reply called upon the younger medical graduates of the University to come forward and to help the association in its successful career. Excellent music under the direction of Mr. Arthur E. Godfrey was provided and the singing of "Auld Lang Syne" brought a most enjoyable evening's proceedings to a close. With regard to numbers this was a record gathering.

DR. A. R. URQUHART, physician superintendent of the James Murray's Royal Asylum, Perth, has been elected chairman of the parish council of Kinnoull and appointed justice of the peace for the county of Perth.

CENTRAL MIDWIVES' BOARD.—A meeting of the Central Midwives' Board was held at the Privy Council offices last week when a proposal from the county medical officers of the West Riding of Yorkshire suggesting a deputation to the board with regard to the administration of the new Act in county areas was favourably received. The draft form of the midwives' roll was considered and adopted as were the forms of certificate required by the Act.

MEDICAL MAGISTRATES.—The following medical men have been placed on the commission of the peace for the county of Glamorgan by the Lord Chancellor: Mr. J. Lynn Thomas, F.R.C.S. Eng., C.B., who served with the Welsh Hospital in the recent war in South Africa; Mr. Thomas Wallace, M.D. R.U.I., M.R.C.S. Eng., senior honorary surgeon to the Cardiff Infirmary; and Mr. John Henry Williams, M.R.C.S. Eng., L.S.A., formerly Mayor of Aberavon and a justice of the peace for the borough.

RESPONSIBILITY FOR MEDICAL FEES.—At the Plymouth county court on June 25th Mr. Michael D. Keily, L.R.C.P., L.R.C.S. Edin., sued the executors under the will of a deceased lady and also sued her husband for the sum of 16 guineas for medical attendance on the deceased lady. The services of Mr. Keily were not denied and the sole question was as to who was responsible for his claim—the executors or the husband. The husband did not appear and a summons which had been issued against him and sent to Aden had been returned unserved. Mr. Keily stated that on previous occasions when he had attended the deceased she had always paid his fees. The solicitors for the executors contended that the husband was responsible, as the estate was left for the benefit of the children. His Honour (Judge Lush-Wilson) gave judgment against the separate estate of the deceased and therefore against the executors.

THE OUTBREAK OF VARICELLA AT CAMBRIDGE.—We have had brought to our notice several paragraphs with reference to what has been called "the mysterious disease at Cambridge," but it appears certain that these paragraphs must have been instigated by irresponsible chatter. The little outbreak of epidemic disease at Cambridge was seen from the first to be variola or varicella. The earlier cases had such an abundant rash—in one case the rash was semi-confluent—and certain other symptoms of an equivocal character that it was thought desirable to have them examined by a consultant physician, while in the interests of the public safety the most suspicious case was isolated while the progress of the disease was carefully watched and the antecedents were being inquired into. As a result of these inquiries no possible channel of infection of small-pox could be traced, while the progress of the rash and development of the symptoms soon put it beyond a doubt that the case was one of varicella. The other cases, 11 in all, proved easier of diagnosis, though they presented some initial difficulty. The reasonable precaution of the public health authority at Cambridge in isolating a suspected case of varicella, especially while 11 cases manifesting similar signs existed in the university town, was quite right, but it should not have been magnified by conversation into extraordinary efforts to stamp out a mysterious disease.

THE NEW EPILEPTIC COLONY OF THE LONDON COUNTY COUNCIL.—On July 1st the Duke of Fife, accompanied by H.R.H. Princess Louise, the Duchess of Fife, formally opened the new epileptic colony which has been built by the London County Council on the Horton estate at Epsom. The buildings of the colony, which will probably cost some £98,000, have been designed by Mr. W. C. C. Smith, engineer to the asylums committee, and Dr. C. H. Bond, who will act as medical superintendent at the colony. They comprise an administrative block and eight villas with provision for 266 males and 60 females. In reply to a vote of thanks the Duke of Fife (the Lord-Lieutenant of the Administrative County of London) said that the principal object of the London County Council in establishing an epileptic colony was to separate those who were only intermittently insane from the inmates of ordinary lunatic

asylums. It must be a great satisfaction, he said, to the members of the asylums committee and to the Council to see the successful completion of their labours that day and also to feel that they had been able to make such a valuable addition to the very many institutions for the public weal which they had conferred upon the metropolis. The asylums committee of the London County Council have now under their control the following asylums: Hanwell, Colney Hatch, Banstead, Cane-hill, Claybury, Bexley Heath, and Horton Manor.

THE CITY ORTHOPÆDIC HOSPITAL.—The Duke of Cambridge, at the fifty-second anniversary dinner of the City Orthopædic Hospital on June 25th at the Hôtel Métropole, London, expressed his opinion in regard to the proposed amalgamation of the three orthopædic hospitals in London that the plan, if agreeable to all parties concerned, would be beneficial. Mr. Noble Smith, in replying to the toast of "The Committee and Medical Staff of the City Orthopædic Hospital," also discussed the proposed amalgamation. He observed that the medical staff agreed with the committee in considering that such amalgamation would very seriously interfere with the benefits conferred by the hospital upon the thousands of poor people who came to it from the vast East-end of London. He wished particularly to dispel an impression which had been spread abroad in the most unfortunate manner that there was some antagonism between the authorities of the King's Hospital Fund and the City Orthopædic Hospital. That idea was quite contrary to the facts. The committee of the King's Fund had always acted in the most liberal manner to the hospital and the authorities concerned had expressed themselves as very pleased with the work done there. It was well known that the committee of the King's Hospital Fund was ever anxious to further the interests of the hospitals and sympathised with the medical men who attended to the patients. The suggestion of amalgamation made by the authorities of the King's Hospital Fund was offered in the kindest spirit and it was quite certain that when those authorities realised the reasons which had prompted the committee and governors of the City Orthopædic Hospital to withhold from amalgamation they would see that such action was not only reasonable but right.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, JUNE 24TH.

Phthisis among Paupers.

Mr. MANSFIELD asked the President of the Local Government Board whether he received reports from the Poor-law inspectors as to the number of cases of phthisis in the infirmary wards of the workhouses of England and Wales; and, if so, whether such reports stated whether the patients were isolated and received special treatment; had his attention been drawn to cases in which such patients had been placed in the same ward as other patients; and whether, seeing the danger of infection caused thereby, he would consider the advisability of providing fresh regulations for the isolation and treatment of all cases of phthisis in the workhouses of the country.—Mr. LONG replied: The ordinary reports made by the inspectors would not necessarily specify the number of cases of phthisis in the infirmary wards of the workhouses, but in particular instances the reports refer to the manner in which these cases are dealt with by the guardians. Where it appears that patients suffering from this disease are in wards with other patients I urge the guardians to take steps to secure their isolation. The number of workhouses where special provision is made by the guardians for phthisical patients is steadily increasing and I do not propose at present to issue regulations on the subject.

Poor-law Medical Officers in Scotland.

Mr. JOHN DEWAR asked the Lord Advocate whether, in view of the inconvenience which arises in parishes in the congested districts of Scotland from the difficulty of obtaining suitable accommodation for parish medical officers, he would take steps to amend the Local Government (Scotland) Act so as to permit parish councils to provide suitable accommodation and to give them powers to borrow money for this purpose.—The LORD ADVOCATE replied: The Secretary for Scotland can give no undertaking as to the introduction of a Bill to amend the Local Government (Scotland) Act in the sense desired by the honourable Member but the matter referred to by him will receive due consideration.

THURSDAY, JUNE 25TH.

Cancer in India.

Mr. WEIR asked the Secretary of State for India whether the Government of India had yet arranged to have cases of cancer recorded separately in dispensary and hospital returns; and, if not, whether he would say when a decision on the subject was likely to be arrived at.—Lord GEORGE HAMILTON replied: The form of these returns is still under revision, but it is probable that cases of cancer will be shown separately.

Home Office Affairs: Lead Poisoning, Vivisection, &c.

At this sitting of the House the vote for the Home Office was taken and, as usual, there were several debates of special interest to the medical profession.

Sir CHARLES DILKE raised first of all the question of lead poisoning among workers in the pottery trade. He acknowledged the good work done in recent years by the Home Office but said that there was much still requiring attention. The first attacks of poisoning among women were exactly the same in 1902 as in 1901, which showed, he feared, that unless they adopted new rules in regard to the amount of lead in the glaze they had reached the irreducible minimum of suffering among women. Last year there was a gratifying diminution in the number of severe cases among women; but in the first four months of this year that diminution had entirely disappeared and, for the first time on record, the number of severe and moderate cases together enormously exceeded the number of slight cases. The defects of the compensation scheme had perhaps prevented its results from being as satisfactory as had been hoped. Only 90 employers in the Staffordshire potteries out of 364 had joined. Four firms were otherwise insured. A majority of persons employed were insured, but almost as many were not insured. The workers were entirely unrepresented in the scheme. The compensation was computed on the actual earnings of 13 weeks, instead of a full week's earnings, and there was no compensation at all unless the worker had worked for 13 weeks continuously under firms which were in the scheme. The workers also alleged that persons were discharged to prevent their coming on the scheme and that the total number of persons compensated under the scheme was very small as compared with the total number of cases of lead poisoning. He contended that there was a case for the appointment of a woman inspector for the Potteries. Sir Charles Dilke also called attention to insanitary conditions in the fish-curing and fruit-preserving industries.

Mr. SHACKLETON raised the question of the ventilation of cotton-weaving sheds.

Mr. TENNANT argued that small laundries should be brought under factory legislation while Mr. JESSE COLLINGS presented the opposite view.

Mr. ASQUITH said that the report of the Committee on Dangerous Trades had in some points not been acted upon by the Home Office and he knew from experience the difficulty of framing special rules, but he impressed on his right hon. friend the urgency for dealing with trades where avoidable dangers to life and health existed.

Mr. JOHN BURNS said that he was glad to find underground bake-houses fast disappearing, but he would point out that while many of these places were no longer being used for baking bread they were being used for baking confectionery and as kitchens for restaurants. The report of the medical officer of health of the City of London disclosed a scandalous state of things. That gentleman suggested very properly the desirability of legislation to deal with the matter, but he himself believed that the existing law was sufficient and he urged the Home Office to put its powers of inspection into force as soon as possible. He could quote instance after instance in which the condition of underground restaurant kitchens was really disgraceful. His view was that law and administration should deal with these places in precisely the same way as with underground bakehouses and that they should henceforth be placed, not at the bottom, but at the top of buildings.

Mr. AKERS-DOUGLAS (Home Secretary), in the course of his reply for the Department, said that with regard to lead poisoning, he thought there was, generally speaking, reason to be satisfied with the steady decline in the number of cases. In 1899 there were 1238 cases; in 1900, 1058; in 1901, 863; and in 1902, 629. The effect of the special rules which were established ten years ago had been, he ventured to think, most marked, especially since the revision of 1898. This subject could hardly be thoroughly discussed just now as the arbitration of Lord James was not yet concluded but would be resumed next week and the case was, so to speak, *sub judice*. He admitted that the position could not yet be considered to be satisfactory. Further progress must be made, further precautions were necessary, and it would be necessary to frame further rules to secure them. With regard to insurance he had reason to think that the number of those who were insured would increase. He assured the Committee that he would spare no effort to combat the evil of lead poisoning. As regarded fisheries, he was bound to say that the conditions at Great Yarmouth were not very satisfactory. The matter had been brought to the notice of the sanitary authority and he had every reason to be satisfied with the way in which it had received the suggestions and the demands made by the Department with regard to putting its house in order. At Lowestoft, though the conditions shown in the report were slightly better than at Yarmouth they were still unsatisfactory. Pressure was being brought to bear to secure the necessary improvement. There was always room for the increase of inspectors of both sexes and recent years showed a continuous increase in appointments. The appointment of a permanent lady inspector for the Potteries had been considered by his predecessors who had not seen their way to place a lady inspector there permanently. In that view he concurred, believing that the staff of lady inspectors could be best turned to account by sending members of it where their services were most needed from time to time. As to the ventilation of cotton-weaving sheds inquiry was going on and he assured Members interested that there had been no undue delay. He agreed that the question of small laundries would have to be considered again.

Mr. JOHN ELLIS called attention to the administration of the Cruelty to Animals Act, 1876. He contended that experiments on living animals should be carefully restricted and guarded. In the first place, the experiment should be for a definite object or purpose; in the second place, it should be conducted by a duly qualified person; and, in the third place, it should be carried out on approved and licensed premises. Then there should be proper inspection and the most important thing in inspection was the character of the inspector. Some years ago it was pointed out that declared vivisectionists had been appointed inspectors, but whoever held that position should be a reasonable man with a fairly balanced mind and should not take up the duties with any preconceived notions either for or against vivisection. He thought that the right hon. gentleman would do well to adopt the system of surprise visits in this as in other matters.

Sir FREDERICK BANBURY said that he was not one of those who thought that in no circumstances vivisection should be practised, but he did say that great safeguards should be attached to its operation

and that if it were carried out it should be carried out with a desire to achieve some object which might throw some light on certain unknown subjects which might benefit mankind. It should not be carried out merely to show what was already well known or merely to illustrate lectures in order to give certain students an opportunity of succeeding in their profession.

Mr. SWIFT MACNEILL insisted that the Act had not protected animals. The report which had been issued was not a judicial document but simply an apologia for the practice, and increasing practice, of vivisection. The two gentlemen who signed it were well-known scientific men, but he was unable to dissociate from himself the idea that they were members, and honoured members, of the surgical profession and bound by professional feeling not to go against their own class.

Sir MICHAEL FOSTER defended vivisection. For the general advance of medical science it was demanded that experiments on living animals should be continued. Physiologists had accepted the Act and had loyally observed it and he appealed to successive Home Secretaries to say if they had not done so. The persons who were licensed to carry out the experiments could be trusted; there was the safeguard of inspection by inspectors who loyally did their duty, who made surprise visits, and who at once reported any abuse of the Vivisection Act. Could not the licensed persons be trusted in their efforts to arrive at the truth which they desired for the benefit of mankind? Could they not be trusted with such safeguards? If they could not be trusted then let that be said and vivisection be discontinued.

Dr. C. F. HUTCHINSON also defended vivisection and, like Sir Michael Foster, he repudiated certain epithets which had been applied to vivisectionists by Mr. Swift MacNeill.

Mr. AKERS-DOUGLAS said that he would like to explain the practice of the Home Office in this matter. All applications for licences came before the Home Secretary personally and they were carefully inquired into by him. No licence was granted except on the recommendation of an eminent medical man, such as the President of the College of Physicians or the President of the College of Surgeons, or without reference to the Society for the Propagation of Scientific Research. Care was taken to see that the licensee was a person whose qualifications were undoubted, whose *bona fides* was beyond dispute, and whose desire for purely scientific research was unquestioned. The Secretary of State never allowed an experiment unless he was satisfied that it was for a proper and an adequately scientific object and unless it was performed by a properly trained and competent person and could be conducted with every precaution against unnecessary pain being inflicted. The experiments were divided into three classes. In the first class the animal was under complete anæsthesia from the beginning to the end of the experiment and was painlessly killed before it became conscious. In such cases no pain whatever could be inflicted. Those cases were one-eighth of the whole. In the second class of cases the animal was under complete anæsthesia during the experiment but was allowed to recover consciousness and to live under observation, so that the effect of the operation might be noted. The experiments in this class were very few in number but were of the greatest importance. They were most fruitful in increasing scientific knowledge and led to the amelioration of human suffering and to the curing of disease. Those experiments were allowed only on rare occasions and the strictest precautions were taken. The third class of experiments were performed without anæsthetics. In this class no experiment whatever was allowed which involved greater pain than that caused by a simple hypodermic injection. It would be almost absurd to describe the prick of an inoculating needle as an operation. Even in these operations the animal was destroyed at once if any pain resulted. When the licence was granted the licensee was bound to make reports to the inspector. He was always liable to visits from the inspector and those visits were practically always surprise visits. As an additional security no experiments were allowed in private places. Nearly always they were allowed only in great medical schools and in the laboratories of pathological institutions.

FRIDAY, JUNE 26TH.

Experiments on Animals.

Sir JOHN ROLLESTON asked the Home Secretary whether, in view of the increase in the number of experiments performed on living animals since the passing of the Cruelty to Animals Act, he would state if he had received any report of the results of these experiments as the Act provides; and, if so, whether he would cause such report to be issued.—Mr. AKERS-DOUGLAS replied: The Secretary of State receives numerous reports of the results of experiments in pursuance of the requirements which the Act referred to enables him to make. Many of these reports become accessible to the public in printed form but I do not think it practicable to publish them officially.

Dr. SHIPMAN asked how many experiments on animals under licence alone and under Certificate B respectively had been witnessed by an inspector at any time during the experiment and during the whole duration of the experiment.—Mr. AKERS-DOUGLAS replied: During 1902 11 experiments under licence alone were witnessed by the inspector and one under Certificate B. In the case of one (under licence) the whole experiment was witnessed and with regard to the others the inspector usually remained a considerable time and on some occasions made more than one visit during the progress of the experiment. In the case of the one under Certificate B the inspector also visited the animal next day. Inasmuch as the inspector habitually visits without notice he cannot be sure of arriving at the beginning of an experiment so as to be able to see the whole of it nor even of finding any experiment in progress. It may be added that the inspector at his visits always sees any animals on which experiments may have been made and carefully notes their condition.

Treatment of Small-pox Patients on the Mersey.

Mr. WEIR asked the President of the Local Government Board whether he was aware that although the White Star liner *Victorian* arrived in the Mersey at 7.30 A.M. on May 22nd four small-pox patients were not removed until she arrived at the Wallasey stage at 3 P.M.; and, in view of the risk attending the removal at the stage where there were a number of cattle drovers and other persons, whether he would state why a tug was not sent out to the vessel on her arrival in midstream to take these sufferers directly to the port hospital at New Ferry; and whether care would be taken that similar cases were more promptly dealt with in future?—Mr. LONG replied: I am aware of the facts referred to in the first part of the question and I obtained a report from the medical officer of health of the Port of Liverpool on the subject last month. There were three cases of small-pox on board the vessel and it appears from the report that, owing to the critical condition of one patient and the height of the steamer above the decks of the tug, it was considered unsafe to land the patients in the tug, and arrangements were accordingly made to land them at the stage. On arriving at the stage no one was allowed on board, due notice being given to those on the stage of the reason; the people were cleared off the gangway and every precaution appears to have been taken in the landing of the patients to prevent any spread of infection. I may add that all infected bedding and clothing were burnt, suspected articles were disinfected, and the vessel was thoroughly fumigated and washed down. I see no reason for objecting to the course adopted in this case.

MONDAY, JUNE 29TH.

Ophthalmia among School Children.

Mr. CROOKS asked the Secretary to the Board of Education whether his department would cause a medical examination to be undertaken of the children attending elementary schools in the metropolis with a view to a report showing how many children were working in the schools suffering from ophthalmia and what means might be adopted to prevent this disease spreading to other children.—Sir WILLIAM ANSON, in reply, said: The Board of Education is not, as at present advised, prepared to undertake the inquiry suggested in the question. A circular was issued in October, 1901, to managers and teachers of urban elementary schools on the subject of children's eyesight. In this circular attention was particularly called to the symptoms of ophthalmia, to the necessity for immediate and continuous treatment, and to the importance of excluding the children affected from school until a medical certificate of their fitness for readmission had been obtained.

Weekly Returns of Infectious Disease.

Mr. SOAMES asked the President of the Local Government Board whether, seeing the advantages that had been derived from the weekly returns of infectious diseases now made in many districts in England, he would make it compulsory on all medical officers of health to make such returns.—Mr. LONG replied: The returns on this subject at present furnished to me are made voluntarily by certain urban district councils every week. These councils receive from me weekly a tabulated statement containing the particulars supplied by the returns. It is open to other urban councils to join in the scheme, but the proposal to make it generally compulsory would require careful consideration and I could not at present promise that this shall be done.

Lymph Supply in Scotland.

Mr. WEIR asked the President of the Local Government Board whether he would state why glycerinated calf lymph prepared at the Board's laboratory was not supplied free of charge to the Local Government Board for Scotland for the use of parochial vaccinators in Scotland, having regard to the fact that last year the Scottish Board paid to Dr. F. R. Blaxall, a salaried officer of the London Board, the sum of £105 for lymph which was prepared in the Board's laboratory and produced from the Board's calves, and whether he would explain why Dr. Blaxall was allowed to sell for his own profit lymph prepared in an establishment supported out of Imperial funds.—Mr. LONG replied: Under an arrangement of a provisional character made in 1899, with the consent of the Treasury, the Local Government Board for Scotland pay Dr. Blaxall £105 per annum for a certain quantity of lymph. The lymph is prepared at the laboratory at Chelsea, but, as I have previously stated, the cost of its production and preparation is borne by Dr. Blaxall. He is not required to devote his whole time to his duties under my department and as the arrangement above referred to does not interfere with those duties and was desired by the Local Government Board for Scotland, my department offered no objection to it.

Mr. WEIR asked the Lord Advocate, in view of the fact that the Local Government Board for Scotland had paid Dr. F. Cadell of Edinburgh £15 14*s.* 3*d.* for 419 tubes of vaccine lymph, whether he would state what facilities Dr. Cadell had for its production and why glycerinated calf lymph was not used for the whole of the work of parochial vaccinators?—The LORD ADVOCATE in reply said: I am informed that Dr. Cadell, as superintendent of vaccination at the New Town Dispensary, Edinburgh, collects vaccine lymph from the arms of children vaccinated by him and hitherto has had no difficulty in supplying all the lymph required by the Central Vaccine Institution for Scotland. To the second part of the hon. Member's question the answer is that there are a few parochial vaccinators who prefer humanised vaccine lymph and they are supplied with it accordingly.

WEDNESDAY, JULY 1ST.

Gallantry of a Colonial Surgeon.

Mr. T. M. HEALY asked the Secretary of State for the Colonies why Governor Hodgson's despatch, received on Oct. 17th, 1899, was only published in the *Gazette* of April 24th, 1903; whether it was within the province of the Colonial Office or the War Office to take note of the recommendation therein contained respecting an act of the greatest gallantry performed by Assistant Colonial Surgeon Garland in saving the life of Captain Green, who had been wounded by an arrow smeared with virulent poison, by sucking the wound for several minutes at the peril of his own life; and whether any effect had been given to the Governor's recommendation that the conduct of Dr. Garland and other officers should be recognised in some marked way.—Mr. CHAMBERLAIN replied: The despatch to which the right hon. Member refers related to one of a series of very minor operations which were not of sufficient importance to call for separate publication. Dr. Garland's case was considered with a view to his being recommended for an Albert medal, but I found to my regret that the circumstances were not such as to bring it within the class of cases regarded as suitable for recognition in that way. The services of Dr. Garland and of the other officers mentioned have been recognised by the publication of the despatches in the *Gazette* which entitles them to have it recorded that they have been "mentioned in despatches."

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BADCOCK, C. HALFORD, B.A. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to Salisbury Infirmary.

BORN, EDWARD TURNER, M.B. Durh., has been appointed Assistant Colonial Surgeon, Medical Officer of Health, Coroner, and J. P. to the West Falkland Island, South America; also Surgeon to the West Falkland Medical Association.

BRANGAN, JOHN, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Coroner for North Meath.

BROINOWSKI, G. H., M.B. Syd., has been appointed Medical Officer, Narrandera Hospital, New South Wales, Australia.

BUTLER, FREDERICK S., M.B. Melb., has been appointed District Medical Officer at Beverley, West Australia.

CORLIS, M. A., M.D. Q. Univ. Can., has been appointed Acting District Medical Officer (*pro. tem*) at Menzies, Western Australia.

GORDON, JOHN M.D. Melb., F.R.C.S. Eng., has been appointed Surgeon to Out-patients, Melbourne Hospital, Victoria, Australia.

GRAY, COLIN, M.B., Ch. B. Melb., has been appointed Medical Officer to the Maldon Hospital and Benevolent Asylum, Victoria, Australia.

GROVES, ERNEST WILLIAM HEY, M.D., B.Sc. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Surgeon to the Bristol General Hospital.

HARRISON, W. A., M.B., C.M. Edin., has been appointed Acting District Medical Officer at Esperance, Western Australia.

KEAY, JOHN, M.D. Glasg., has been appointed to the Superintendentship of a new Asylum to be erected at Bangor, near Edinburgh.

KYLE, H. G., B.A., M.B., B.Ch. Oxon., has been appointed Surgeon to the Bristol General Hospital.

LANGDON, J. A., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer at Onslow and Quarantine Officer for the Port of Onslow, Western Australia.

LAVERY, E. A., L.R.C.P. Edin., L.R.C.S. Edin., L.F.P. & S. Glasg., has been appointed Government Medical Officer and Vaccinator at Gosford, New South Wales, Australia.

MCCLELLAND, WALTER C., B.Sc., M.B., Ch.M. Syd., has been appointed Honorary Medical Officer to the Marrickville Cottage Hospital, New South Wales, Australia.

MARKS, HERBERT WILLIAM JAMES, M.D. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Member of the Dental Board of New South Wales, Australia.

MARTIN, C. J., F.R.S., of the University of Melbourne, has been appointed to the post of Director of the Jenner Institute of Preventive Medicine, Chelsea-gardens, S.W.

ROBERTSON, JOHN, M.D. Edin., has been appointed Medical Officer of Health for Birmingham.

ROWELL, THOS., M.B., B.S. Durh., has been appointed Second Assistant Medical Officer at the City Asylum, Newcastle-on-Tyne.

RYLE, HENRY GREVILLE, B.A., M.B., B.Ch. Oxon., has been appointed Honorary Surgeon to the Bristol General Hospital.

SMYTH, HENRY JAMES, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the No. 10 District by the South Molton (Devon) Board of Guardians.

SPROULE, W., M.D., M.S. Edin., has been appointed Medical Officer, Burrowa Hospital, New South Wales, Australia.

SYMONS, WILLIAMS, M.D. Brux., L.R.C.P. Lond., M.R.C.S., L.S.A., D.P.H. Oxon. and Durh., has been re-appointed Medical Officer of Health for Bath.

WEBB, F. E. A., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory Act for the Cambridge District of the County of Cambridge.

WIGHAM, WILLIAM HARPER, M.B. Durh., M.R.C.S., has been appointed Medical Officer for the Nos. 1 and 4 Districts by the South Molton (Devon) Board of Guardians.

WILKINSON, J. F., M.D., Ch.B. Melb., has been appointed Physician to Out-patients, Melbourne Hospital, Victoria, Australia.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ARMY MEDICAL SERVICE.—Examination of Candidates for not less than 30 Commissions in the Royal Army Medical Corps.

AYR COUNTY HOSPITAL.—Resident House Surgeon. Salary £70 per annum, with board, residence, and washing.

BATH, ROYAL UNITED HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Male House Surgeon. Salary £80 per annum, with board and washing.

BRECKNOCK COUNTY AND BOROUGH INFIRMARY.—Resident House Surgeon, unmarried. Salary £120 per annum, with apartments, board, attendance, &c.

CARLOW DISTRICT ASYLUM.—Resident Medical Superintendent. Salary £300 per annum, and allowances. Also Assistant Medical Officer. Salary £100 per annum, with apartments, rations, washing, &c.

CARMARTHENSHIRE INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, attendance, &c.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Second House Physician for six months. Salary at rate of £30 per annum, with board, washing, and residence.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Resident House Surgeon.—Salary £100, with board, residence, and laundry.

GUY'S HOSPITAL MEDICAL SCHOOL.—Gordon Lecturer in Experimental Pathology.

ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY, Douglas, Isle of Man.—Resident House Surgeon, single. Salary £82 a year, with board and washing.

JESSOP HOSPITAL FOR WOMEN, Sheffield.—House Surgeon, unmarried. Salary £75 per annum, with board, lodging, &c.

LIVERPOOL EYE AND EAR INFIRMARY.—House Surgeon. Salary £80, with residence, maintenance, and laundry.

MANCHESTER, ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Medical Officer for 12 months. Salary £65 per annum, with board and residence.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board, residence, and washing.

OWENS COLLEGE, Manchester.—Junior Demonstrator in Physiology. Stipend £100, rising to £150 per annum.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Examiner in Dental Surgery.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary £30 per annum, with board, washing, and residence. Also Junior Assistant House Surgeon for six months. Salary at rate of £40 per annum, with board, washing, and residence.

TOTTENHAM HOSPITAL.—House Surgeon. Salary £90 per annum. Also House Physician. Salary £60 per annum. Also Casualty Officer. Salary £40 per annum. All for six months, and with board, residence, and laundry.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician for six months. Honorarium of £25, with board and lodging. Also Medical Radiographer. Honorarium of £31 10s. per annum.

WALTHAMSTOW URBAN DISTRICT COUNCIL ISOLATION HOSPITAL AT CHINGFORD.—Resident Medical Officer. Salary £120 per annum, with board and lodging.

WEST RIDING ASYLUM, Wadsley, near Sheffield.—Fifth Assistant Medical Officer. Salary £140, rising to £160, with board, &c.

WILLESDEN URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary £500 per annum.

WITHINGTON URBAN DISTRICT COUNCIL, BAGULEY SANATORIUM.—Resident Medical Officer. Salary £250 per annum, with board, residence, &c.

YORKSHIRE, BECKETT HOSPITAL, Barnsley.—Resident House Surgeon. Salary £100, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeon under the Factory and Workshop Act, at Dundalk, in the county of Louth; at Syston, in the county of Leicester; at Rye, in the county of Sussex; at Ballyshannon, in the county of Donegal; at Ambleside, in the county of Westmorland; at Portland, in the county of Dorset; at Linlithgow, in the county of Linlithgow; at Killoughy, in King's County; at Newport, in the county of Salop; at Wiveliscombe, in the county of Somerset; and at Newport, in the county of Fife.

Births, Marriages, and Deaths.

BIRTHS.

GOMEZ.—On June 25th, at The Cottage, South Petherton, Somerset, the wife of F. J. Gomez, M.R.C.S., L.R.C.P. Lond., of a daughter.

KNOX.—On June 24th, the wife of John E. Knox, M.B., of Redlands, East Molesey, of a son.

PERKINS.—On June 22nd, at Trivandrum, the wife of H. Campbell Perkins, M.R.C.S., L.R.C.P. Lond., of a daughter.

RUST.—On June 28th, at 30, St. Mary's-road, Higher Crumpsall, Manchester, the wife of John Rust, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

GODWIN—ARDRON.—On June 24th, at St. Peter's Church, Syston, Leicester, Alfred Harold Godwin, M.R.C.S. Eng., L.R.C.P. Lond., to Madeline, youngest daughter of the late Joseph Thomas Ardron.

ROBERTS—JONES.—On the 30th June, at the Stanley-road Welsh Presbyterian Church, Bootle, by the Rev. Griffith Ellis, M.A., assisted by the Rev. W. Elias Williams, Hugh Jones Roberts, M.R.C.S., J.P., of Gwyddfor Penygroes, Carnarvonshire, to Edith Mary, second daughter of William Jones, Esq., J.P., of Monfa, Bootle, and Llwydiarth, Anglesey.

SEALE—MCFARLAND.—On June 24th, at St. Cyprian's, Kimberley, South Africa, by the Rev. Canon Hamilton, Edward Albert Seale, M.D.T.C.D., of Ceres, Cape Colony, to Janet Margaret, daughter of the late George McFarland, Kimberley.

STYLE—WARD.—On June 24th, at South Brent parish church, Frederick William Style, M.R.C.S., L.R.C.P. Lond., to Alice Lilian, daughter of the late Lieutenant Colonel W. G. Ward, Indian Staff Corps, and of Mrs. Ward.

WORTHINGTON—LE BLOND.—On June 24th, at St. Jude's, South Kensington, George Vigers Worthington, M.A., M.B., B.C. Cantab., to Evelyn Maud Mary, only daughter of Francis Aubrey Le Blond.

DEATHS.

COSENS.—On the 28th June, at Brockenhurst, Charles Henry Cosens, M.R.C.S., L.R.C.P., of Oxford-terrace, Hyde-park, London, son of the late F. W. Cosens, in his 45th year. No flowers.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE CORONER AND UNREGISTERED MEDICAL MEN.

ON June 25th Mr. M. H. Taylor, J.P., coroner of the Kingston division of Surrey, held an inquest at the Surbiton district council offices on the body of Madame Gertrude Guillaume Schack, of Broadstones, The Avenue, Surbiton Hill, who died on the previous Saturday morning at the age of 59 years. The deceased, who in Germany enjoyed the title of Countess, was a well-known vegetarian of pronounced views who had frequently appeared on the platform of the Kingston-on-Thames Humanitarian Society.

Susan Rushworth, a domestic servant, stated that her mistress enjoyed fairly good health until a year ago when she fell over a tin box in her bedroom and struck herself on the breast. She complained of no pain, but a medical man from London was sent for and he attended deceased who appeared to be going on well until the previous week. Deceased, said witness, led her all along to believe that the injury to her breast was only a cut and remarked that when the body had cleansed itself the wound would heal up. Although, said witness, deceased kept her bed on the Tuesday of the previous week, she did not send for any medical man until Wednesday, when Mr. Allinson, who had been attending her, was summoned. Deceased told her that she thought cleansing of the body would be done by dieting. Witness asked Mr. Allinson if deceased was suffering from cancer and he replied in the affirmative, adding that she might not last for more than a month or two. The medical man ordered her to take barley water and a little ice and he dressed the place. On Friday night, as Madame became worse and at her request, Dr. Porter, a local practitioner, and a nurse were sent for. The medical man arrived just before midnight but said that deceased was too far gone for him to do anything, death occurring at 2 o'clock on Saturday morning. Questioned by the coroner, witness said the doctor from London left a plan of diet but suggested no line of treatment for the relief of her mistress. She told him that Madame had spoken about getting the services of a nurse and he promised to see about it when he called on the Saturday, but deceased had been dead 12 hours when he called. Her mistress knew that Mr. Allinson's name was not on the Medical Register, but she had great faith in him.

Thomas Richard Allinson, who stated that he was a medical man, unregistered, of 84, Spanish-place, Manchester-square, London, W., said that he had known deceased for six or seven years. On June 18th of last year he was sent for and found deceased had had a fall. There was a small tumour in the right breast which had been there before she met with her accident. When he visited her again in August she said she felt very well in herself but the growth in her breast had developed. She had no pain, however.

The Coroner: Did you suggest any line of treatment?—Witness: She had her own ideas about the matter. I said I should like her to see a specialist with me, but she did not turn up again until October when she had lost flesh and the tumour had further grown. I again suggested that she should see a specialist but she did not and I lost sight of her until January of this year when the tumour had grown larger in every way and she had all the symptoms of debility and weakness. Witness again asked her to see a specialist, but she merely shrugged her shoulders and said, "What is to be will be." On witness telling her that she had cancer and that she had only a few months to live she replied, "I am only too pleased; death has no horrors or trouble for me. It is only passing from one state to another." That, observed witness, was the secret of her reticence all through. On June 17th witness received a telegram asking him to see her and on coming down to Surbiton he found her in a bad condition but he did not think she was dying. On calling again on Saturday he found she was dead but he was not surprised at the news. In cases like hers any excitement would mean a fatal ending.

The Coroner: Do you say she knew you were an unregistered medical man?—Witness: Yes, certainly.

The Coroner: If you knew she was going to die what did you propose to do about the certificate?—Witness: My certificate is good. It is usually accepted by registrars. I keep my surgeon's qualification still. Any person can give a certificate. Only that issued by a qualified practitioner would be accepted. I was qualified before I was registered.

The Coroner: Do you give certificates in all your deaths?—Witness: I have very few deaths in my practice.

The Coroner: You are lucky.—Witness: Yes, I am more than lucky. My practice is as large and as successful as any in the kingdom.

The Coroner, after reminding the witness that that was not the place for him to advertise himself, asked him if he suggested anything in the way of local treatment in the case.—Witness: It was no use suggesting anything to Madame Shack. She had her own views and opinions on the matter.

The Coroner: But about surgical treatment?—Witness: She would not have any interference with her body. I should have suggested an operation in the earlier stages but she would not have heard of it.

Replying to a further question by the coroner, witness said his name was removed from the Medical Register in 1892 for writing in the *Weekly Times and Echo* and for advertising which was contrary to the etiquette of the medical profession.

The Coroner: I think your name was removed from the list for discreditable advertising and that the General Medical Council decided that you were guilty of infamous conduct in a professional sense?—Witness: Quite right.

The Coroner: You tell us that in London your certificates are all accepted?—Witness: Yes, and in the country too.

The Coroner: I can tell you that in this part of the country they would not be accepted.

After the witness had replied to a juryman as to cancerous growths,

The Coroner said: Is that the view taken by the medical profession?—Witness: I don't care about the medical profession and I don't bother about any authorities. I am an authority in myself.

The foreman of the jury: In this part of the country we are not used to this free-and-easy style of treatment.—Witness: You forget that everybody in this country has a right to do as they like. When I come to die I shall not call in a medical man.

Dr. G. Porter of "Frascati," Claremont-road, Surbiton, said that as the result of a post-mortem examination he found that death was due to cancer in the breast accelerated by want of proper surgical dressing and food.

The Coroner: You have heard what kind of lady she was. Mr. Allinson said he advised certain treatment and she would not carry it out.

In reviewing the evidence the coroner said that they might have whom they liked as their medical man, but if his name was not on the Medical Register they need not pay him. If it was clearly shown that the doctor was not a registered man and if there was no neglect the doctor could not be blamed.

The jury, at the end of half an hour's deliberation in private, returned a verdict of "Death from natural causes," and added a rider thereto to the effect "that they were of opinion that the case did not have proper attention, as no steps whatever appeared to have been taken to deal with or dress the cancer."

THE HOSPITAL NURSE.

MR. A. L. COHEN, L.C.C., delivered an address on June 20th at the service of the Jewish Religious Union at the Wharncliffe Rooms, in the course of which he appealed to his hearers to consider the daily routine of the hospital nurse and having done so to organise among themselves house-to-house collections for the hospitals of London so as to enable them to increase their nursing staffs. Mr. Cohen, in the course of an eloquent address, brought facts and figures to the notice of his audience proving the enormous debt that is owing by the public to the hospitals of London and pointed out at the same time that hospital authorities are not the real delinquents when nurses are overworked—it is the parsimony of the public that keeps the institutions permanently under-staffed. We are glad to note that Mr. Cohen has publicly tackled the accusations launched against the hospitals as a whole of overworking and underpaying and generally neglectfully treating their nurses. Undoubtedly the life of the hospital nurse is a very arduous one, but the whole spirit of the time is to make her duties as acceptable and healthful as possible. "The alleviation of the lot of the nurses is a question of cash," says Mr. Cohen, and in so saying he leaves nothing to be added. The amount received in response to his practical little address was £90.

MEDICAL WITNESSES' FEES AT CORONERS' INQUESTS.

To the Editors of THE LANCET.

SIRS,—I attended an inquest on Thursday last after making a necropsy. The inquiry was postponed till to-day (Monday). I attended again, having received a telephone message from the coroner's officer (*viâ* the police). Surely I am entitled to an extra fee of £1 1*s.* for my extra attendance? Holding this view I declined to sign the sheet or to accept £2 2*s.* I shall be glad to have your opinion. I intend to appeal to the borough council. The coroner says that he has no power to pay more than £1 1*s.* for two attendances. Surely this is absurd.

I am, Sirs, yours faithfully,

June 29th, 1903. G. F. T.

*** We think that our correspondent is in error. The regulations for medical witnesses' fees are laid down in Section 22 of the Coroners Act of 1887. A fee of one guinea is payable to any practitioner giving evidence without having made a post-mortem examination and one of two guineas for giving evidence and making a post-mortem examination (by direction of the coroner). Legally a witness can be summoned, no matter how many times the inquest may be adjourned, and is only entitled to the one fee.—ED. L.

THE DANGERS OF SPITTING.

A CORRESPONDENT writes to us on this subject and, in referring to the use of handkerchiefs as receptacles for the expectorations of consumptives, says: "It is appalling to think how the bacilli of tuberculosis must be thus spread over the linen of thousands of households week by week; in the absence of thorough boiling the warmth of the hot water used in washing will not destroy the germs." It would be

disquieting to think that this often occurs, but we trust that there are not nowadays many laundries where handkerchiefs are not thoroughly boiled. It is necessary thoroughly to boil some garments in order to extract all the dirt apart from other considerations. In addition, all good laundries instruct their customers to tie up in separate bundles or to put in separate baskets everything which has been used by a sick person and such linen is disinfected and washed separately at the laundry, every precaution being taken by the proprietors and laundresses if only for their own sakes. The idea of our correspondent is that paper handkerchiefs should be used and afterwards burnt in brasiers to be placed in the lavatories of railway stations and other places of public resort. Paper handkerchiefs are, of course, frequently recommended for the use of tuberculous subjects and the only advantage of their employment is that they can be immediately burnt. So that our correspondent's suggestion is practical.

UNSEEMLY ADVERTISING.

OUR attention has been drawn to an advertisement appearing in the *Evening Standard* of an institution calling itself the "Homœopathic Hospital and Dispensary." The advertisement is of such a nature that we feel sure that if any properly qualified medical man is on the staff of the institution he will see that the advertisement is discontinued or that his connexion with the Homœopathic Hospital and Dispensary ceases. Among other statements the advertisement appeals particularly for cases unsuccessfully treated elsewhere. From further portions of the advertisement we are to presume that those unfortunate patients whose ailments have hitherto baffled medical effort will be relieved of their sufferings at the rate of one shilling and a penny per bottle of medicine or one shilling and half-a-crown for books obtainable from the Homœopathic Hospital and Dispensary. An advertisement such as that to which we refer debases the institution which it represents far below the level of any patent medicine selling establishment. It uses a name which apparently represents an establishment conducted as a medical charity and at the same time it employs the grossest methods of commercial advertising. Whatever may be said for homœopathy by its supporters nothing can be said in favour of the advertisements of the Homœopathic Hospital and Dispensary.

VARILAT STOCKINGS.

To the Editors of THE LANCET.

SIRS,—I shall be glad if you or any of your readers can supply me with the address of the makers of a form of elastic stocking called, I believe, Varilat, or some similar name? It is a lattice-work of rubber without any cotton or silk in its composition.

I am, Sirs, yours faithfully,

Cambridge, June 26th, 1903. A. C. INGLE.

*** Our correspondent will find the stocking described in THE LANCET of Feb. 29th, 1896, p. 559. The makers are there given as the "Varilat" Lattice Elastic Stocking Company, 70, Fenchurch-street, London, E.C.—ED. L.

OBSCENE LITERATURE.

WE have often complained of the apathy shown by the postal authorities and the police with respect to the transmission and the public sale of obscene circulars and pamphlets. Our columns from time to time supply ample evidence of the proportions which this scandalous traffic has attained and yet it is only when some unusually flagrant offence has been committed that anything is done to vindicate public morality. It does not appear that the law is uncertain or defective on this point but the enforcement of it is unquestionably lax. We therefore welcome the announcement that draft by-laws are to be submitted to the London County Council which if they are adopted cannot fail to strengthen the hands of those who recognise the widespread mischief and contamination caused by such means. Our contemporary the *Law Times* is taking an active part in promoting this very necessary reform and in its issue of May 30th, after commenting on the legal aspects of the question, points out how essential it is that the police should feel that they have the support of a healthy public opinion behind them.

OMNE IGNOTUM PRO MAGNIFICO.

THE following rose-coloured view of the prospects of a newly-qualified medical man is given in an article published in *Indian Engineering* and reprinted in the London *Engineer* of June 26th. For the benefit of medical readers who do not happen to be conversant with the subject, we may explain that Great George-street, Westminster, is the Harley-street of the civil engineers. The writer of the article complains that civil engineers on the completion of their training find appointments difficult to obtain, and that very few of them ever succeed in working on their own account. We hope that his delineation of a medical career may not attract too many recruits to the already overcrowded ranks of our profession. He says:—

"The bulk of the civil engineering work done in Westminster lies, of course, in the hands of an exclusive few, of whom it may fairly be said, with the fullest recognition of the high reputation they so worthily uphold, that they are employers of other men first of all, and distinguished engineers afterwards. ..... The rest, the vast majority of Civil Engineers, are the employed. The chances of the most ambitious of the latter becoming one of the former are so small as to be almost negligible, and the limits of his career should be obvious to the young enthusiast from the outset. It is not easy to find a parallel to this state of affairs in any other profession; to conceive, for example, of medical work being the monopoly of a few leading doctors, all the rest receiving appointments from or being actually employed by them. Independence lies within the immediate view of every competent young doctor. A comparatively small sum of money will place a built-up practice or a lucrative partnership at his disposal, or an older doctor may offer him a partnership on account of his professional merits alone. Otherwise, he may establish himself in a house in a neighbourhood which seems to offer an opening, put a brass plate on the door, and work up a decent practice of his own."

M.B. Edinburgh will find in a leading article in THE LANCET of August 17th, 1895, p. 412, a summary of our views upon the matter. The question of the right to use the title of "doctor" cannot be settled without dispute because the title of "doctor" is earned in two ways. As an academic title it belongs only to those who possess a genuine degree granted by an established university. As a popular title the public will naturally apply it to everyone who is known to them as "the doctor."

Scientific Cruelty.—We have received quite a cross letter from C. A. M. Bailey who describes himself, or herself, as a member of the executive committee of the National Canine Defence League. We recommend to C. A. M. Bailey perusal of a leading article in the *Times* of Saturday, June 27th, and of the speech by the cultured and humane representative of the University of London in Parliament, upon which the *Times* article was founded.

A Layman.—The site of the earliest perspiration is different in different subjects. The head and shoulders are usually first affected. Fatness has nothing to do with the site.

Mr. A. Leith.—The "caps" may be made as our correspondent surmises, but they would not constitute a source of any danger.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.) London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat Golden-square (9.30 A.M.), Soho-square (2 P.M.).

WEDNESDAY (8th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.) Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (9th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat, (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (11th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex, (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (8th).—DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M. Demonstration of Cases of Interest.

THURSDAY (9th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Dr. R. D Purefoy (Master of the Rotunda Hospital, Dublin): Notes of Four Cases of Chronic Inversion of the Uterus. Discussion on Lacerations of the Cervix Uteri and their Consequences (opened by Prof. J. Taylor of Birmingham). The following, among others, are expected to take part—Dr. W. Duncan, Mr. Edge, Dr. B. Fenwick, Dr. Helme, Dr. Jellett, Mr. B. Jessett, Dr. G. Keith, Mr. S. Keith, Dr. Macnaughton-Jones, Dr. Moullin, Dr. I. Parsons, Dr. Purefoy.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. T. C. Fox: Clinique. (Skin.) 5.15 P.M. Mr. T. N. Kelynack: Intra-thoracic Tumours.
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Dunn: Lantern Demonstrations of the Fundus.

TUESDAY (7th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. T. Williams: Clinique. (Medical.) 5.15 P.M. Dr. A. Whitfield: Eczema.
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Paget: Surgical Cases.
NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Dr. Beevor: Cerebral Circulation.

WEDNESDAY (8th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. E. W. Roughton: Clinique. (Surgical.) 5.15 P.M. Mr. J. Berry: Hare-lip and Cleft-palate.
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Russell: Some Diseases of the Nervous System.
HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Maguire: Diseases of the Aortic Valves.

THURSDAY (9th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Dr. P. Stewart: Hysteria and its Diagnosis.
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Keetley: Some Common Diseases and Injuries of the Knee.
MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—4 P.M. Mr. J. Berry: The Surgical Treatment of Empyema. (Post-Graduate Course.)
CHARING CROSS HOSPITAL.—4 P.M. Dr. Willcocks: Medical Cases. (Post-Graduate Course.)
THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. Steward: Treatment of Tuberculous Lymphatic Glands.
GUY'S HOSPITAL MEDICAL SCHOOL—UNIVERSITY OF LONDON (Physiological Theatre).—4 P.M. Dr. E. W. Ainley Walker: Recent Work upon the Nature of Immunity. (Gordon Lecture.)

FRIDAY (10th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. Horne: Clinique. (Throat.) 5.15 P.M. Mr. F. C. Wallis: Preparations, Methods, and After-treatment in Operations.
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. L. Williams: Extraction, When and How.
LONDON HOSPITAL MEDICAL COLLEGE (University of London) (New Clinical Theatre).—4 P.M. Mr. J. Hutchinson: Diseases in India—Leprosy in India.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1903, which was completed with the issue of June 27th, and the Title-page to the Volume, are given in this number of THE LANCET.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1903 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 2nd, 1903.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
June 26	30·18	S.W.	...	128	77	56	59	64	Fine
,, 27	30·11	S.	...	135	86	63	64	72	Fine
,, 28	30·01	W.	...	133	86	66	63	69	Fine
,, 29	30·19	N.W.	...	127	76	56	60	66	Fine
,, 30	30·30	N.E.	...	122	74	58	57	66	Fine
July 1	30·29	N.W.	...	122	78	59	58	66	Fine
,, 2	30·08	S.	...	128	80	61	61	70	Fine

During the week marked copies of the following newspapers have been received: *Straits Echo (Penang), Chester Chronicle, Yorkshire Daily Observer, Staffordshire Sentinel, Times of India, Aberdeen Weekly Free Press, Pioneer Mail (India), Dublin Evening Telegraph, Echo, Bradford Observer, Daily Express, Globe, Medical Brief (St. Louis, U.S.A.), Knowledge, Westminster Gazette, Windsor and Eton Express, Derbyshire Courier, Manchester Weekly Chronicle, Derbyshire Times, Reading Mercury, Herts Advertiser, Daily Telegraph, Journal of Commerce,* &c.

Communications, Letters, &c., have been received from—

A.—Anderson's College Medical School, Glasgow, Secretary of; Messrs. Arnold and Sons, Lond.; Messrs. H. M. Alexander and Co., Marietta, U.S.A.; A. C. O.; Agriculture, Department of, Ottawa, Statistician of.

B.—Mr. S. H. Benson, Lond.; Mr. H. T. Bull, Bury, Lancashire; Mr. E. Baker, Birmingham; T. B. Browne, Ltd., Lond.; Mr. C. Bach, Tacoma, U.S.A.; Mr. A. H. Buck, Brighton; Mr. T. B. B. Brown, Lond.; Mr. Butlin, Lond.; British Consulate General, Vienna; Sir Arthur Bigge, Lond.; Mr. B. A. Beevor, Cahir; British Consulate General, Budapest; Mr. F. E. Baddard, Lond.; Messrs. J. H. Booty and Son, Lond.; J. W. Benson, Ltd., Lond.; Mr. C. L. Bedford, Birmingham; Dr. Comyns Berkeley, Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.; Messrs. W. H. Bailey and Son, Lond.

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G.—Dr. P. R. Griffiths, Cardiff; Great Eastern Railway Co., Continental Traffic Manager of; Mr. H. Bellamy Gardner, Lond.; Dr. C. G. Gibson, Launceston; Dr. S. F. Gibbs, Lond.; Messrs. Douglas Gordon and Co., Aberdeen; Major A. E. Grant, I.M.S., Boscombe.

H.—Ma. C. C. Haviland, Frimley Green; Miss C. Hind, Rudgwick; Mr. J. E. Hancock, Hurst Green; Dr. A. C. Hansen, Copenhagen; Mr. J. T. Hislop, Wrexham; Messrs. Hooper and Jackson, Lond.; Mr. G. Hermanni, Lond.; Messrs. Haasenstein and Vogler, Geneva.

I.—Institut de Bibliographie, Paris.

J.—Mrs. Heywood Johnstone, Lond.

K.—Dr. George E. Keith, Lond.; Kew Gardens, Southport; Mr. A. D. Kennard, Hampton Wick; Messrs. R. A. Knight and Co., Lond.

L.—Mr. Cuthbert Lockyer, Lond.; Dr. J. Fletcher Little, Lond.; Dr. A. Leonard, Westcliff-on-Sea; Mr. H. K. Lewis, Lond.; Mr. H. J. Lewis, Cardiff.

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